

THE

D E N T A L

JAN 25 1944

Digest



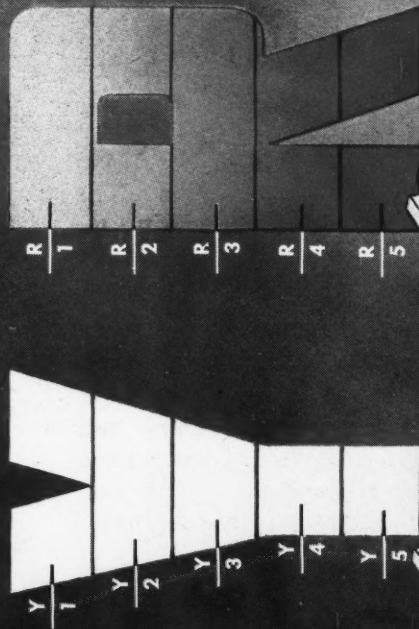
JANUARY 1944

44

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Demonstrating Veri-chrome controlled color brilliance...

COLOR SATURATIONS INTENSIFIED
FOR EASIER PERCEPTION



All teeth are basically yellow (pigment) in color. Some are tinged or modified with red (pigment).

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ARE THE INGREDIENTS
OF
COLOR BRILLIANCE



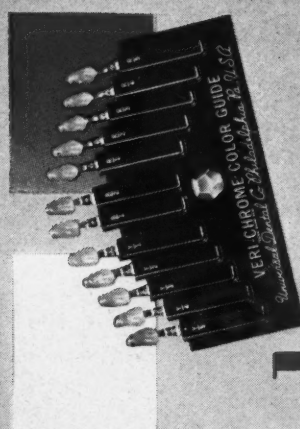
For practical purposes, the brilliance of amount and proportion of black and white is constant in all human teeth.

However, the saturation or amount of color (yellow, red hues) in human teeth is not constant. As a matter of fact, all six anteriors in a single dentition rarely exhibit the same saturations of color.

Nevertheless, because the brilliance of each is constant, a deeply color-saturated tooth appears neither artificial nor unusual among less saturated teeth. You recognize this as normal.

On the other hand, were all the teeth of the same color-saturation but presenting variations

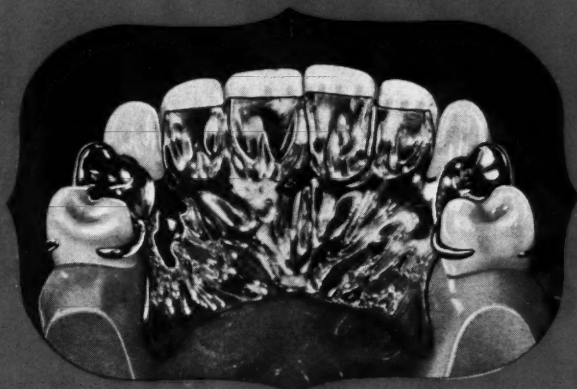
of brilliance, the dentition would look most unusual and artificial. Veri-chrome are the only tooth colors that have controlled color brilliance. That's why they blend-in with natural teeth—why you can reproduce color variations as they occur in nature by combining any of the Veri-chrome colors needed for desired esthetic effect.



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Cap. 1

THE D E N T A L *Digest*

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JANUARY 1944

Impression Technique for the Stabilization of Lower Dentures, *Manuel A. Klinger, D.D.S.*.... 10

Congenitally Missing Teeth, *Fred D. Miller, D.D.S.*.... 12

Instructions in Roentgenographic Procedures for Dental Officers.... 13
Captain F. F. Molt and Lieutenant (jg) N. O. Feeley, (DC), U.S.N.R.

Complications Following Extraction of Teeth, *Otto Meyer, M.D.*.... 19

Clinical and Laboratory Suggestions, *Chester J. Henschel, D.D.S.*.... 20

Facial and Functional Rehabilitation Without Plastic Surgery, *Harry M. Weiss, D.D.S.*.... 22

The Editor's Page.... 26

Contra-Angles 28

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MANUEL A. KLINGER, D.D.S. (University of Michigan College of Dentistry, 1929) is a general practitioner who contributed to our CLINICAL NOTES in August, 1938. He describes here an IMPRESSION TECHNIQUE FOR THE STABILIZATION OF LOWER DENTURES.

FRED D. MILLER, D.D.S. (Thomas W. Evans Dental Institute, University of Pennsylvania) emphasizes the importance of roentgenograms in the early diagnosis of CONGENITALLY MISSING TEETH.

CAPTAIN FREDERICK F. MOLT (DC), USNR, received his D. D. S. at the Chicago College of Dental Surgery in 1901. LIEUTENANT NEWELL O. FEELEY (jg) (DC) received his D. D. S. at the Kansas City Western Dental College in 1939. In civilian life, Captain Molt specialized in oral surgery, roentgenography, and diagnosis. Lieutenant Feeley was in general practice in which

About Our CONTRIBUTORS

he stressed roentgenography. These co-workers present here INSTRUCTION IN ROENTGENOGRAPHIC PROCEDURES FOR DENTAL OFFICERS.

OTTO MEYER, M. D., is the author of the following DIGEST articles: THE MECHANISM OF ORAL FOCAL INFECTION (June, 1940); FOCAL INFECTION AND ESSENTIAL HYPERTENSION (January, 1942); and FOCAL INFECTION AND IDIOPATHIC EPILEPSY (September, 1943). In this issue Doctor

Meyer discusses COMPLICATIONS FOLLOWING EXTRACTION OF TEETH.

CHESTER J. HENSCHEL, D.D.S., (New York University College of Dentistry, 1929) has written several articles for this magazine: In July, 1941: PAIN CONTROL THROUGH HEAT CONTROL; in October, 1941: PAIN CONTROL BY COLD CONTROL; in August, 1943: THE CLAMP SALIVA EJECTOR. In this issue Doctor Henschel presents the first of a series of CLINICAL AND LABORATORY SUGGESTIONS: a method of preventing painful temporary fillings, and a method of manipulating gutta-percha fillings.

HARRY M. WEISS, D.D.S. (New York College of Dentistry, 1922) is a general practitioner. He presents his report of a case of FACIAL AND FUNCTIONAL REHABILITATION WITHOUT PLASTIC SURGERY.

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Impression Technique for the Stabilization of Lower Dentures

MANUEL A. KLINGER, D.D.S., Detroit

DIGEST

A technique is described for taking a preliminary impression which shows the proper outline; for preparing a base-plate tray from a model of this impression; and for fitting and waxing the final tray so that the resultant lower denture will show horizontal stability.

THE PRELIMINARY impression should show all the muscle attachments and the mandibular ridge. It should extend lingually into the floor of the mouth if an oversized tray and enough low-fusing compound are used. The resulting overextended preliminary impression should show an over-all thickness of from 3 mm. to 5 mm. (Fig. 1).

Preliminary Technique

1. Chill the impression thoroughly.
2. Trim the excess compound away from the tray with a sharp knife so that the tray can be peeled away without breaking the compound.
3. Re-enforce the impression with a piece of coat hanger wire bent to fit, warmed, and buried below the surface of the tray side of the compound impression.
4. Add a handle of compound to facilitate the handling of the impression (Fig. 2).
5. Chill the impression thoroughly once more, and trim the compound until only a slight overextension remains all around.
6. Heat the inside of the impression with hot water from a syringe to a depth of about a millimeter.
7. Seat the impression in the mouth with pressure, and chill.
8. Warming an inch of the periphery at a time with a mouth torch,

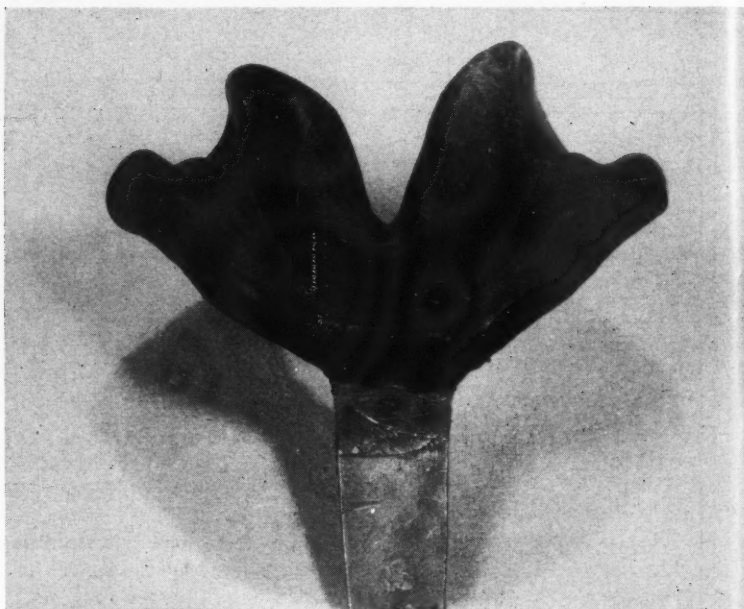


Fig. 1—Preliminary impression showing muscle attachments, ridge area, and lingual extension to floor of mouth.

muscle-trim the entire periphery by using finger manipulation of the cheeks and lip, and tongue manipulation on the lingual side. (The heated

area must be dipped in hot water before being placed in the mouth.) Trim the heels by heating both at the same time; trim until no compound is

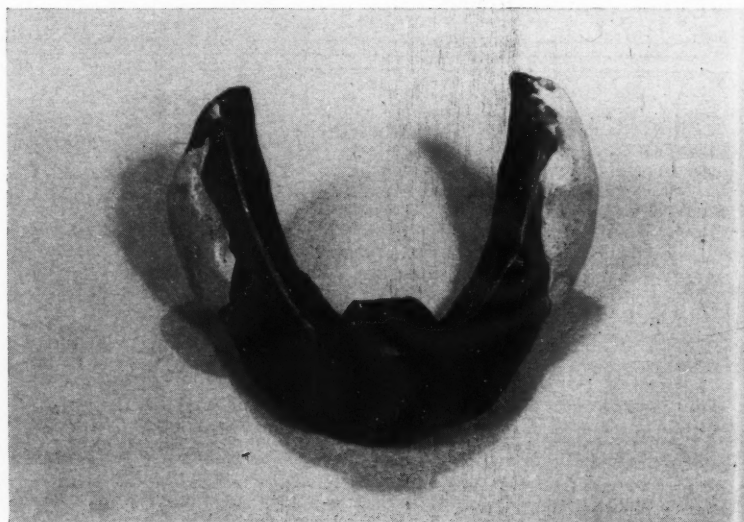


Fig. 2—Preliminary impression showing wire re-enforcement, compound handle, and impression paste extension in distobuccal area.

turned back when the patient opens and closes the mouth.

9. Muscle-trim the entire periphery again quickly. The resultant impression should resist dislodgement from every direction.

10. The outline of the impression is now correct except in the distobuccal borders. The area on each side from the heel to a position distal to the first molar region should extend into the buccal fold and should be parallel to the external oblique ridge (Figs. 2 and 3). The amount of extension in these areas must be determined for each patient:

a) Dry the compound impression thoroughly in the distobuccal areas.

b) Mix a little impression paste and lay it on both sides of the distobuccal areas to a thickness of about $\frac{1}{3}$ inch.

c) With petrolatum on the finger, pack the paste into the fold as soon as it shows setting tendencies. The patient's mouth should be almost in a resting position.

d) The patient should draw in the cheeks and hold them so for about 5 seconds, then swallow.

e) Remove the impression when the paste is set; the extension may vary in width from $\frac{1}{2}$ mm. to 4 mm. (Fig. 3).

f) Remove any paste that may be under the impression.

The preliminary technique can be done in from 20 to 30 minutes during the patient's first visit.

Laboratory Procedure

1. A model is made from the impression, and a baseplate is adapted on the model as perfectly as possible.

2. All margins except the distobuccal flanges are trimmed just short of the flexion line.

3. A mound of base-plate material about 1 inch long and $\frac{1}{4}$ inch deep and wide is added over the crest of the ridge about $\frac{1}{4}$ inch from each heel.

4. The mounds of base-plate material are united with the baseplate.

5. Another mound of base-plate material is added over the labial crest of the ridge.

6. A well adapted piece of coat hanger wire is buried in the three mounds so that the wire rests on all



Fig. 3—Preliminary impression showing muscle-trimmed compound and impression paste extension in distobuccal areas.

the baseplate except the two $\frac{1}{4}$ inch areas at the heels behind the mounds.

7. The exposed wire is covered with narrow strips of base-plate material and the edges seared to the baseplate; this is for re-enforcement but should not extend beyond $\frac{1}{4}$ inch of any margin.

8. A handle of base-plate material is attached (Fig. 4).

9. The base-plate tray is chilled, removed from the model, and the rough edges are smoothed.

Final Impression Technique

1. At the next appointment, try the tray in the patient's mouth, test the tray for interference, and relieve

the areas that impinge on the tissue.

2. Heat about an inch of the margin of the baseplate with a mouth torch.

3. Dip the tray in hot water for 3 or 4 seconds.

4. Seat the tray in the mouth and, holding it down firmly on each side with the first and second fingers, massage the heated edge against the tissue, and chill. After this has been done completely around the baseplate, the tray should have a definite suction which will vary in degree according to mouth conditions. Do not continue the procedure unless the suction is present.

5. Check the tray for leaks.

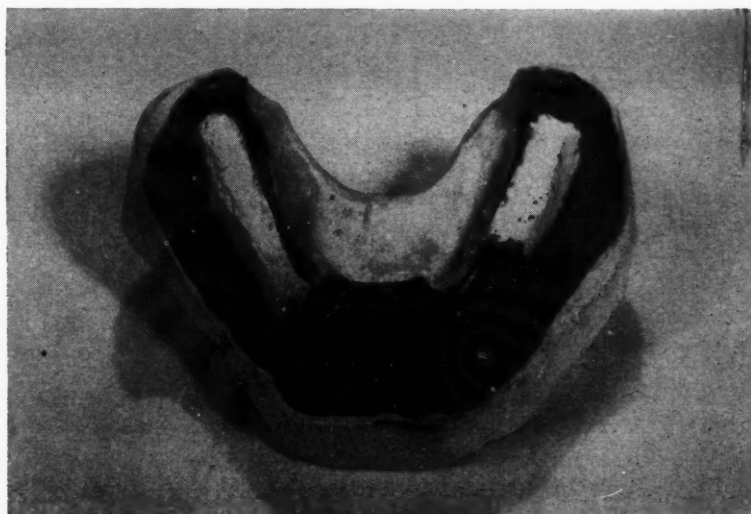


Fig. 4—Base-plate tray on model made from impression in Fig. 3. Note base-plate reinforcements (white) and exposed wire reinforcement.

6. Dry the tray thoroughly.
7. Paint the inside of the tray with Kerr's orange wax using a stiff brush.
8. Dip the tray in cold water; then place the tray in the mouth and keep it under pressure for a minute or more.

9. Remove the tray and examine it; all places where the wax contacted the tissue will be shiny.

10. Add a layer of wax to the inside of the tray, a thicker layer to the dull spots.

11. Replace the tray in the mouth after dipping it in cold water, and massage to place for 2 minutes.

12. If the tray cuts through the wax, grind the baseplate in that area for relief. Add more wax.

13. Place the tray in the mouth again and check for tissue contact. When all areas show an even lustrous surface and no dull spots, have the



Fig. 5—Final impression showing even lustrous coat of wax and peripheral roll.

patient swallow slowly three or four times; this will produce a roll of wax over the margins (Fig. 5).

14. Chill the tray in the mouth and

remove it. Replace it in the mouth and check again. Horizontal stability should be the result.

14149 East Jefferson Avenue

Congenitally Missing Teeth

FRED D. MILLER, D.D.S., Altoona, Pennsylvania

ALL CONGENITALLY missing teeth should be discovered early. Roentgenograms should be made promptly if abnormal interdental spaces exist or if teeth fail to erupt. In this way a correct diagnosis will be made when the patient is young and proper corrective measures can be undertaken. Supernumerary teeth, which may not be located otherwise, can be located readily in roentgenograms.

Parents who are interested in their children's personal appearance and physical well-being are often shocked to learn that a child has teeth missing. Usually, however, they are grateful

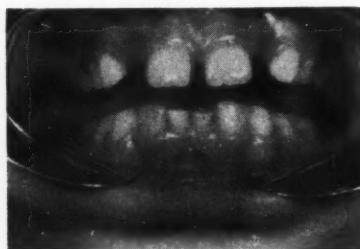


Fig. 1—Mouth of a young boy with congenitally missing lower central incisors.

that the abnormality has been located early so that the corrective measures will be effective.

1122 Twelfth Avenue



Fig. 2—Roentgenogram of lower teeth of patient shown in Fig. 1.

If Your DENTAL DIGEST Is Late

IN WARTIME, magazine mail is delayed because the postal service is overburdened. We mail THE DENTAL DIGEST each month on its scheduled mailing date—the fifteenth of the month of issue. But it is impossible to control the date of delivery to readers. Please be patient if your DENTAL DIGEST is late.

Instructions in Roentgenographic Procedures for Dental Officers*

CAPTAIN F. F. MOLT and LIEUTENANT (jg) N. O. FEELEY, DENTAL CORPS, U. S. N. R., Great Lakes, Illinois

DIGEST

Suggestions are made for: (1) the mixing and care of developing and fixing solutions; (2) the processing of films; (3) the correction of common errors made in roentgenography; (4) the prevention of harmful effects to patient and operator; and (5) the positioning of the patient, angulation of the central ray, and determination of proper exposure time in dental roentgenography. In both the processing of the films and the roentgenographic technique, standardization of as many factors as possible will help in detecting the causes of errors, should they occur.

ROENTGENOGRAPHY begins and ends in the darkroom. No matter how exacting the technique, unless the darkroom solutions are carefully and uniformly mixed, and processing accurately watched, failure is inevitable. Standardization of as many factors as possible means that when errors do occur the cause of failure will be more readily detected. It is believed that the following suggestions will simplify greatly the mixing, use, and care of solutions:

Mixing of Solutions

Developer—Developing solution is made by combining the mixed powder ingredients into a water solution. This powder comes packaged in ½-gallon and 1-gallon sized cans. Each can contains two separate powders:

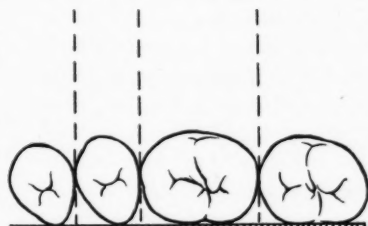


Fig. 1—Roentgen rays pass directly through the interproximal spaces preventing overlapping of approximating teeth.

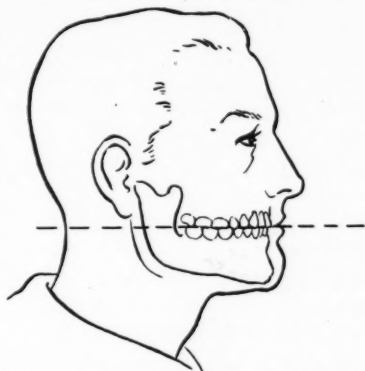


Fig. 2—Plane of occlusion of the teeth must parallel the beam.

1. The actual developing agent is the smaller bulk of powder and is contained either in a wrapped paper box buried in the powder of the large can or in a separate compartment in the lid of the can.

2. The remaining chemical ingredients constitute the larger bulk of powder which is contained in the can.

In every instance the smaller portion of powder, the developing agent, is the first to be mixed.

Mixing One Gallon of Developer—

1. Thoroughly wash a gallon jug and fill it about half full of water of approximately 125° F.

2. Lay out a sheet of paper to catch any loose powder from the can.

3. Open the can of powder ingredients and carefully remove the paper container of developer. Pour any loose powder that falls onto the paper back into the can.

a) If the can of developing agent is within the larger can, the smaller portion is to be dissolved first.

b) If it is necessary to use two ½-gallon sized cans of powder, both cans are to be opened at this time.

4. Empty the smaller portion (developing agent) into the jug of water. The powder will dissolve rapidly if the jug is held firmly in both hands and a horizontal circular movement employed to create a whirlpool in the jug. If two ½-gallon sized cans of powder are used, dissolve the smaller portion of powder from both cans at this time.

5. When the contents of the smaller package are dissolved, add about one-fourth of the powder in the large can and repeat the whirling motion. Add the remainder of the powder gradually, and repeat the whirling motion of the jug until all the powder is dissolved.

6. Fill the jug to the level of the base of its neck with warm water to complete the 1-gallon mix.

7. Allow the gallon of solution to settle for at least ½ hour.

8. Empty and scrub the developing tank; rinse with clean water.

9. Pour the developing solution into the clean tank and cool to the proper temperature for use.

Mixing One-Half Gallon of Developer—1. Dissolve the contents of a ½-gallon sized can of powder in a measured quart of water in a jug as directed.

2. Add sufficient water to make ½ gallon of solution.

3. To make sure of exact measurements before mixing the solution, 2 measured quarts of water may be poured into the jug and the proper level of the liquid marked with a piece of tape or a file mark. When the solution is mixed, the jug can be filled to the level of this mark.

*This is the first of two articles on roentgenographic procedures by Captain Molt and Lieutenant Feeley. The second will appear in the February issue. Original drawings by Jack Young, Pharmacist's Mate, second class.



Fig. 3—Sagittal plane must be perpendicular to deck, occlusal plane parallel to deck.

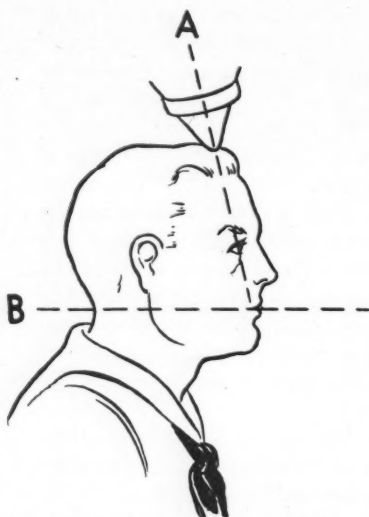


Fig. 4—Point of cone on midsagittal plane of frontal bone; vertical angulation of central ray 10° toward the face (occlusal view of maxillary arch). A, Central ray; B, occlusal plane.

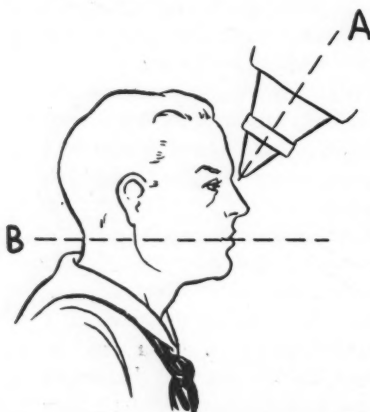


Fig. 5—Tip of cone touching bridge of nose; vertical angulation of 60° (maxillary incisor and anterior palate area). A, Central ray; B, occlusal plane.

Hypo Solution—1. Hypo (fixing solution) is packaged in cans or bottles containing sufficient dry powder ingredients to make a half gallon of solution.

2. Within the can or bottle is a smaller container of acidifier (hardener) necessary for the preparation of the fixing solution. This acidifier must be dissolved in a separate glass or enamelware container.

3. Use a gallon jug as in mixing the developer. Inasmuch as any trace of hypo will contaminate the developer, a separate jug should be used for the hypo. Label the hypo and developer jugs and keep them only for mixing and storage purposes.

Mixing One Gallon of Hypo—1. To 2¼ quarts of water of 100° F. add slowly, a portion at a time, the chemical contained in two of the large bottles or cans. Use the whirling motion described for mixing developer and continue until all the chemical is dissolved.

2. Dissolve the acidifier chemicals in a separate container which holds 1 quart of water of about 70° F. The acidifier generates heat while dissolving; therefore, it should be dissolved slowly in water at 70° F. Too warm a solution will result in a milky mix which will not react properly.

3. Add the acidifier solution slowly and with continued whirling to the first solution in the jug.

4. Fill the jug with cool water to the 1-gallon level.

Dark Room Management

Solutions, although correctly prepared, need proper care to assure continued efficiency. Observations made in our clinic darkrooms, which serve from eight to fourteen chairs, are the basis for the following conclusions:

1. A 2-gallon tank of developer, when cared for in the following manner, should last from four to six weeks; in warm weather this period is somewhat shorter:

a) The level of developer in the tank should be maintained at a point 1½ inches from the top. Loss of solution by removing films and hangers and by evaporation will reduce the fluid level rapidly. The developer



Fig. 6—Vertical angulation of 60°; horizontal angulation of 45° from sagittal plane (maxillary cuspid area).



Fig. 7—Vertical angulation of 60°; horizontal angulation of approximately 65° (maxillary bicuspid and molar area).

should be replenished with fresh solution which is mixed in ½-gallon quantities as needed and kept in a stoppered jug in the dark room.

b) Tanks should be kept covered at all times to minimize oxidation and evaporation when not in actual use. The solution can be covered while the films are developing.

c) The temperature of the developer should never be permitted to rise above 70° F.; the rate of oxidation doubles with every 10° rise in temperature. A constant temperature of 65° F. is ideal.

d) Utmost care should be observed in preventing contamination of the developer by hypo.

2. The hypo solution, although more stable than the developer, should receive equal care:

a) Keep the level of the solution constant by replenishing it at frequent

intervals with fresh solution. Hypo may be mixed 1 gallon at a time as it does not deteriorate as rapidly as developer.

b) The films should be properly rinsed for from 5 to 10 seconds before being placed in the hypo. This will lessen the tendency of the alkaline developer to neutralize the acidity of the hypo.

Time-Temperature Control

The following is a standardized method of developing films to achieve uniform results through control of the developing time in proper relationship to the temperature of the developing solution:¹

Temperature of Developer	Developing Time
60° F....develop for...	6½ minutes
65° F....develop for...	5 minutes
70° F....develop for...	4 minutes
75° F....develop for...	3 minutes
Ideal time-temperature: 5 minutes at 65° F.	

Developing solution which is too warm causes too rapid a reaction and results in a darkened film or a distortion of the image due to a slipping of the softened emulsion of the film. Developing solution which is too cold causes a slowing of the chemical reaction to a point where only a faint image will appear.

Developing Procedure—1. Check temperature of developing solution. If the temperature is under 60° F. or over 75° F., warm or cool the water bath surrounding the tanks until the temperature of the developer is within the safe range.

2. Set indicator hand of timer clock.

3. Unwrap film and clip to hanger.

4. Place film in developer.

5. Start timer clock. Keep timer clock in dark room and stand by to remove film immediately when bell rings.

6. When bell rings, transfer film immediately to rinse water. Do not remove film from developer until the full time has elapsed, unless for a brief check as to the progress of development.

¹The time-temperature table is for use with Eastman developer and Eastman "regular" or "radia-tized" film; other types of films require different amounts of time for development.

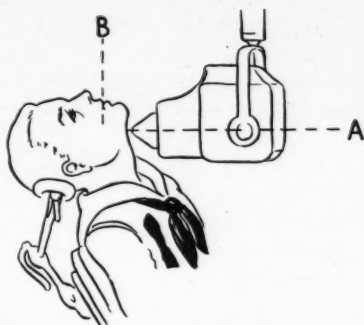


Fig. 8—Occlusal plane of teeth, plane of film, and sagittal plane are perpendicular to deck (occlusal view of mandibular arch). A, Central ray; B, occlusal plane.

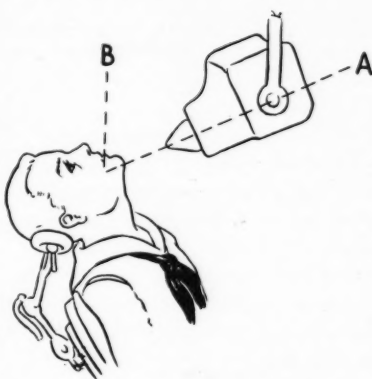


Fig. 9—Vertical angulation of 25°; horizontal angulation parallel to sagittal plane (symphysis and anterior incisor area). A, Central ray; B, occlusal plane.

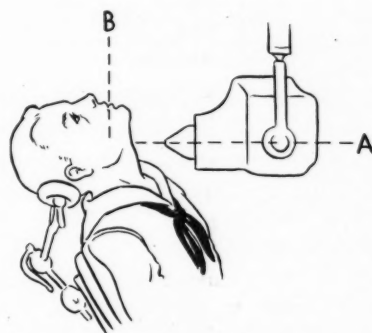


Fig. 10—Central ray parallel to deck and directed slightly toward median plane to parallel long axis of involved teeth (occlusal view of limited area of mandible). A, Central ray; B, occlusal plane.

Rinsing—Transfer the film to rinse water as soon as the bell rings. Rinse the film for from 5 to 10 seconds before placing it in the fixer. This prevents contamination of the fixing bath and staining of the film.

Fixing—Place the film in the fixing

(hypo) bath for a total of 10 minutes. The film may be examined briefly after 3 minutes in the fixer but should be returned at once to complete the 10-minute period.

Washing—Wash all films in running water for at least 20 minutes to remove hypo salts and to preserve the film.

Drying—Hang the films in still, warm air to dry. Films may be forced-dried in front of a fan, but if this is done the texture of the emulsion may be coarse because of accumulated dust.

Faulty Roentgenograms

Errors in Development—1. Overdevelopment:

a) Film dark; too "thick" for interpretation.

b) Lack of contrast.

2. Underdevelopment:

a) Film light; too "thin" for interpretation.

b) Image shows insufficient detail.

3. Weak or exhausted developer:

a) Film light; too "thin" for interpretation.

b) Insufficient detail.

4. Cold developer:

a) Film light; too "thin" for interpretation.

b) Insufficient detail.

5. Warm developer:

a) Film dark; muddy appearance.

b) Lack of contrast.

c) Possible distortion of image due to a softening of emulsion.

Errors in Exposure—1. Overexposure:

a) Film dark.

b) Lack of contrast.

2. Underexposure:

a) Film light; too "thin" for interpretation.

b) Insufficient detail.

3. Exposure to light or stray radiation:

a) Film uniformly dark. The film may show dark streaks if light has leaked into the film packet or holder.

Old or Improperly Stored Films—

1. Film dark.

2. Film appears mottled and

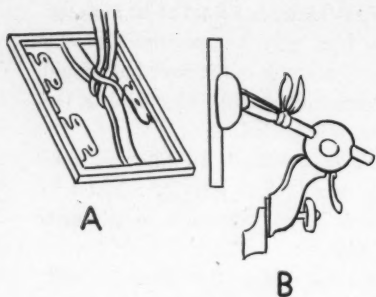


Fig. 11—A, Gauze bandage secured around central pin of clamp on back of cassette; B, cassette attached to headrest in vertical position for lateral jaw roentgenography.

streaked with irregular dark margins

3. No detail.

Distortion of Image—1. Elongation: Image longer than tooth because the angle of the ray was too acute. Correct by increasing the angulation.

2. Foreshortening: Image shorter than tooth because the angle of the ray was too obtuse. Correct by decreasing the angulation.

3. Image blurred:

- Film curved in mouth.
- Movement of patient during exposure.
- Movement of film during exposure.
- Movement of x-ray tube head during exposure.

Checking for Errors

If the roentgenograms are not satisfactory, check the following:

Solutions—1. Temperature: Should be between 60° F. and 70° F. for best results.

2. Time of development: Use cor-

rect developing time for temperature of developer.

3. Time for proper rinsing: Rinse for from 5 to 10 seconds before fixing.

4. Time in hypo: For viewing, 3 minutes; for permanence, 10 minutes.

5. Time for washing: 20 minutes.

6. Age of solutions: If the developer is old and weak, a thin film will result; if the hypo is weak, the film clears slowly.

7. Contamination: Hypo in the developer retards development and a thin film is the result; developer in the hypo retards fixing and a stained film is the result.

X-ray Machine—1. Milliamperage: Low milliamperage causes underexposed films.

2. Voltage: Low voltage causes underexposed films.

3. Timer switch: Failure to press hard enough on timer release permits timer to buzz without turning on roentgen ray.

Operative Technique—1. Basic positioning of patient's head: All vertical angles are given in degrees from the horizontal plane.

2. Vertical angulation: Improper angulation causes foreshortening or elongation.

3. Horizontal angulation: Improper angulation causes overlapping of approximating teeth or a distorted curve of roots.

4. Position of film in mouth: Film improperly positioned causes cutting off or distortion of image.

5. Retention of film packet: Movement of film packet causes blurring of image.

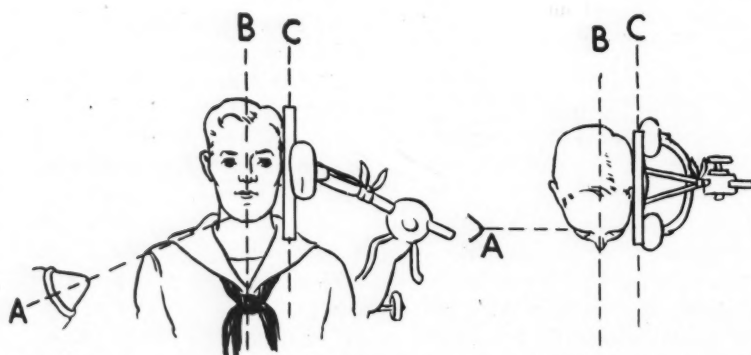


Fig. 12—Patient seated crosswise in chair so that side of face to be roentgenographed is next to cassette. A, Central ray; B, sagittal plane; C, plane of cassette.



Fig. 13—Head thrust forward so that cervical spine is angled dorsally.

Film—1. Age of film: If the film is old, the image appears dark and muddy. Check expiration date on box.

2. If the film is exposed to stray x-radiation or white light, the roentgenogram is dark or streaked.

Causes of Imperfections

1. Roentgenograms which are too dark may be the result of:

- Overexposure.
- Overdevelopment.
- Developer too warm.
- Old film.
- Improperly stored film;

films should not be stored in a box or cabinet with chemicals or medicines.

- Exposure to stray x-radiation.
- Exposure to white light.

2. Roentgenograms which are too light may be the result of:

- Underexposure.
- Underdevelopment.
- Developer too cold.
- Weak or exhausted developer.

e) Failure to press hard enough on timer release.

3. A stained film (chemical fog) may be the result of:

- Failure to rinse film after development.
- Insufficient time in hypo.
- Failure to wash film after it is removed from hypo.

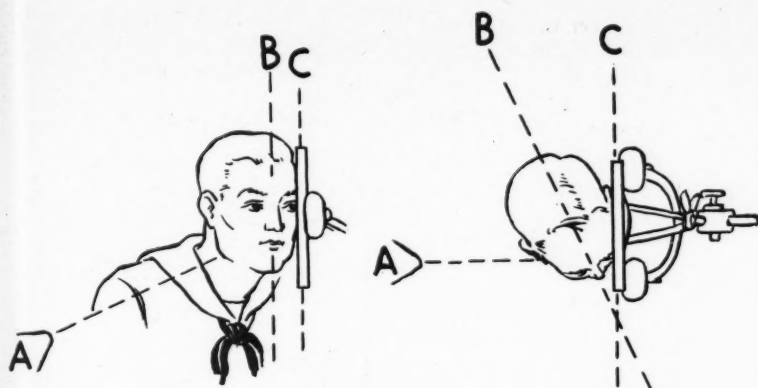


Fig. 14—Cheek touches cassette; sagittal plane of face perpendicular (bicuspid area). Tip of nose 1 inch to 1½ inches from surface of cassette. A, Central ray; B, sagittal plane; C, plane of cassette.

d) Drops of solution on film before developing.

4. Reticulation (cracked, network appearance) of the film may be the result of sudden plunging of the film from warm to cold solutions.

Safety Factors in Roentgenography

Safety for the Patient—When a dental machine is used with a target-film distance of about 8 inches and with the pointed cone touching the skin, the safe limit of exposure to any one area of the face is 600 milliamperes (60 seconds at 10 milliamperes), or the equivalent of twelve 5-second exposures. In a series of roentgenographic examinations distributed about equally for the different regions, in which many different angles are employed, a total exposure of 3 minutes, or thirty-six 5-second exposures, can be made with safety. If the limit of exposure (60 seconds for one area, and 3 minutes for the entire face) is reached, 3 weeks should elapse before additional roentgenograms are made.

Safety for the Operator—The tube head of the modern dental machine permits no roentgen rays to escape except through the diaphragm opening of the cone. If the operator stands well out of the line of direct radiation and at a sufficient distance from the patient to prevent secondary radiation, little danger is encountered in the use of the dental machine.

It is dangerous to hold the film in the patient's mouth. The destructive power of roentgen rays is cumulative and builds up from day to day. Holding the film in the mouth occasionally may do no harm to the fingers, but routine exposure of the fingers to roentgen rays will result in a destructive burn.

The following table² may be used as a guide to the relative tolerance of the operator to secondary radiation at various distances from the patient:

Distance between operator and roentgenographed part	Total daily time in seconds before tolerance is received by operator	Number of 5-second exposures that may be made daily
24 inches	396 seconds daily	79 exposures
36 inches	890 seconds daily	178 exposures
48 inches	1575 seconds daily	315 exposures

We may conclude, therefore, that if the operator stands at least 3 feet from the patient and out of the line of direct radiation, he will receive no harmful effects from roentgen rays.

Correct Angulation for Dental Roentgenography

The most common cause of failure in securing satisfactory dental roentgenograms is the incorrect basic positioning of the patient's head. Most operators use the angle scale of the tube head as a guide in adjusting the vertical angle of the central ray. This

²Figures taken from General Electric "Manual of Operative and Radiographic Technique for CDX Dental X-Ray Unit."

scale is numbered in degrees from the horizontal plane. In order to interpret accurately the correct angulation of the scale, the patient's head must be in a definite position.

To secure a roentgenographic image that will accurately reproduce the dimensions of the tooth and the surrounding bony structure, two separate adjustments of angulation of the central ray are necessary:

Horizontal Angulation—Horizontal angulation of the central ray is controlled by rotating the tube head on a horizontal plane so that the central ray is perpendicular to the mesiodistal axis of the tooth or teeth being roentgenographed. The ray should pass directly through the interproximal spaces, thus preventing an overlapping of approximating teeth (Fig. 1).

Vertical Angulation—The rule for directing the central ray perpendicular to the plane bisecting the angle formed by the tooth and the film is mathematically true but impracticable to apply. It is difficult to direct the central ray perpendicular to a visible plane and impossible to direct them accurately at an imaginary plane.

By recording the angles required

in thousands of examinations, average angles for each region have been established. These average angles are effective in a majority of cases, provided the occlusal plane of the teeth being roentgenographed is kept parallel with the deck (the floor) and the sagittal plane vertical to it:

X-ray Angulation and Exposure Guide		
Teeth	Angle	Time
Upper centrals	45-50°	2½ seconds
Upper laterals, cuspids	45-50°	2 seconds
Upper bicuspid	35-40°	2½ seconds
Upper molars	25-30°	3½ seconds
Lower incisors	15-20°	2 seconds
Lower cuspids	-20°	2 seconds
Lower bicuspid	-10°	2½ seconds
Lower molars	0-5°	3 seconds

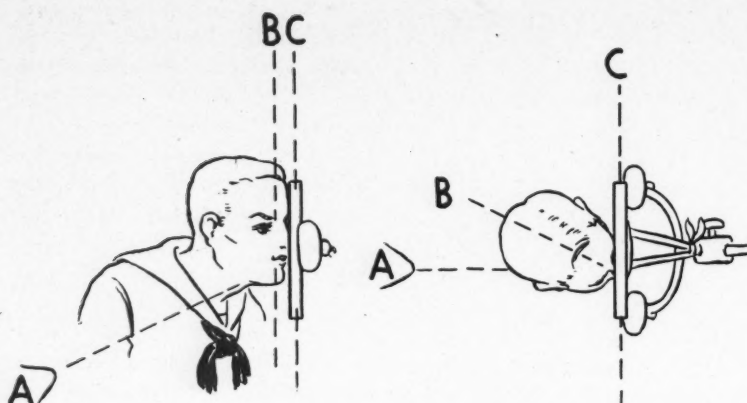


Fig. 15—Nose flattened against cassette; sagittal plane of face perpendicular (cuspid and incisor area). A, Central ray; B, sagittal plane; C, plane of cassette.

Occlusal View of Entire Maxillary Arch

The occlusal view of the maxillary arch with the central ray projected down through the frontal bone should show a cross section of all maxillary teeth, the ray paralleling the long axis of the teeth. This view is useful in determining the relative position of impacted teeth or foreign bodies but of little or no value in outlining cysts.

1. Position the patient's head so that the occlusal plane of teeth parallels the deck, and the sagittal plane is perpendicular (Figs. 2 and 3).

2. Insert the film packet (rough side up) in the mouth between the occlusal surfaces, instructing the patient to close his teeth firmly over the film.

3. Position the point of the cone on the midsagittal plane of the frontal bone, the vertical angulation of the central ray at 10° toward the face (Fig. 4).

4. Exposure time, 15 seconds (Eastman occlusal film, superspeed). If an intra-oral film holder with intensifying screens is used, the exposure time may be reduced to $1\frac{1}{2}$ seconds. Not only will a greater clarity of detail be achieved, but the shorter exposure time will reduce the danger of exceeding the alopecia dose, which is 30 seconds for this area.

Maxillary Incisor and Anterior Palate Area—This view is used for determining the extent of a cystic area, and for locating impacted or super-

numerary teeth, or foreign bodies.

1. The basic position of the patient's head and placement of the film packet are the same as for the occlusal view.

2. Position the tip of the cone to touch the bridge of the nose, the vertical angulation of the central ray at 60° (Fig. 5).

3. Exposure time, 1 second (occlusal film, superspeed, no screens).

Maxillary Cuspid Area—1. The basic position of the patient's head and placement of the film are the same as for the occlusal view.

2. Vertical angulation, 60° ; horizontal angulation, 45° from sagittal plane (Fig. 6).

3. Exposure time, 1 second (occlusal film, superspeed, no screens).

Maxillary Bicuspid and Molar Area—This view is used for differentiating cystic areas from the maxillary sinus, and for locating roots in the sinus.

1. The basic position of the patient's head and placement of the film are the same as for the occlusal view.

2. Vertical angulation, 60° ; horizontal angulation, approximately 65° (immediately in front of malar bone) (Fig. 7).

3. Exposure time, 1 second (occlusal film, superspeed, no screens).

Occlusal View of Entire Mandibular Arch

The occlusal view of the mandibular arch is used for localizing stones in Wharton's duct, and for lo-

cating foreign bodies and impacted teeth. This view should show with reasonable accuracy a cross section of all mandibular teeth. For a more critical diagnosis, supplementary roentgenograms may be made of limited areas of the mandibular arch, using periapical film.

1. Position the patient's head so that the occlusal plane of the teeth, the plane of the film, and the sagittal plane are perpendicular to the deck (Fig. 8).

2. Insert the film in the mouth between the occlusal surfaces of the teeth in the plane of occlusion. Insert the film packet with the rough side toward the roentgen ray.

3. Position the point of the cone on the midsagittal plane on a level with the first molar. The "vertical angulation" of the central ray should be parallel with the deck, and the "horizontal angulation" parallel to the sagittal plane. Either the skin-cone technique or the 12-inch target-film distance may be used. Perspective is improved when a longer target-film distance is employed.

4. Exposures: for soft tissues, 1 second; for a clearer outline of tooth and bone, $1\frac{1}{2}$ to $2\frac{1}{2}$ seconds; for 12-inch target-film distance, increase the exposure.

Symphysis and Anterior Incisor Area—This is an excellent view to supplement lateral jaw roentgenograms for fracture diagnosis; it shows incisors in full length as well as the symphysis.

1. The basic position of the patient's head and placement of the film packet are the same as for the occlusal view of the entire mandibular arch.

2. Vertical angulation, 25° ; horizontal angulation, parallel to the sagittal plane (Fig. 9).

3. Exposure, $2\frac{1}{2}$ seconds (occlusal film, no screens).

Occlusal View of Limited Area of Mandible

In determining the buccal or lingual relationship of an impacted tooth, a broken needle or other foreign body, the ray should be directed parallel to the long axis of the teeth.

(Continued on page 21)

Complications Following Extraction of Teeth

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DIGEST

Most postoperative complications following tooth extractions are caused by an exacerbation of a pre-existing latent infection of the jugular veins.

To prevent a provocation of the latent jugular phlebitis, the application of cold compresses around the neck has proved successful. In severe cases, the infection of the jugular veins has been successfully treated with leeches.

INASMUCH AS complications following tooth extractions can be serious and sometimes fatal, it is important to treat such complications in their incipency. On the basis of modern pathology regarding the mechanism of spreading in odontogenic infection, it should be possible to institute prophylactic measures against postoperative complications.

The infection spreads from infected teeth through the small connecting veins into the jugular veins, causing a latent phlebitis. This latent jugular phlebitis is the deciding factor in the problem of most postoperative complications. A diagnosis of phlebitis is made when on finger palpation of both jugular veins there is sensitiveness to pressure. Healthy veins are not sensitive to pressure, as can be observed by exerting strong pressure on the superficial veins of the back of the hands. Sensitiveness to pressure indicates inflammation of the jugular veins. In some cases a distinct infiltration of the jugular veins is noted. I have observed for a number of years that in almost every case of postoperative complications after tooth extraction the jugular veins are extremely sensitive to pressure. This indicates an exacerbation

of the latent infection in the jugular veins.

A dental extraction may be defined as a forcible avulsion of a tooth from a bone in which it is embedded. *Streptococcus viridans* is always present in alveolar infection and frequently enters the blood stream when the infected areas are traumatized. The resulting bacteremia is usually transient.

Siegmund,¹ Professor of pathology at the University of Kiel, has described in detail the spreading of odontogenic septicemia. It must be borne in mind that all tooth infections are automatically accompanied by a latent infection in the jugular veins. This latent jugular phlebitis is important because of the hypersusceptibility of the vein tissues. Bacterial allergy provokes the latent infection in the jugular veins. The provocation of the latent infection of the jugular veins with its increased dissemination of bacteria and bacterial toxins likewise explains the presence of acute symptoms in the joints, the appendix, the gallbladder, the heart, or other tissues after extractions of infected teeth.

Complications

Phlebitis — De Takats² reported acute attacks of phlebitis in the peripheral veins following removal of teeth or tonsils, thus demonstrating how foci of infection may produce phlebitis. He described the case of a patient who had recurrent attacks of thrombophlebitis in varicose veins. After several infected teeth were extracted a phlebitis, which had been in a quiescent stage for some time, became acute in the veins of both legs.

Septicemia—The most serious postoperative complication is septicemia,

the development of which has its basis in phlebitis. Generally a condition is defined as septicemia if, from a focus within the body (jugular phlebitis), bacteria constantly or periodically enter the blood stream and cause subjective and objective disease symptoms.

Successful treatment of septicemia depends on the discovery and removal of the focus of infection. So far chemotherapy (sulfonamides, penicillin) has not proved successful in removing the focus. I³ have described my method of removing infection in the jugular veins in a previous article in this magazine.

Bacterial Endocarditis — Bacterial endocarditis, another complication following extraction of infected teeth, is often fatal. Kelson,⁴ in a study of the records of 250 cases of subacute bacterial endocarditis at the Massachusetts General Hospital, found a 10 per cent incidence of recent dental surgical operations. Since then, however, in a series of 500 cases in which he investigated the dental history, the incidence rose to about 25 per cent. The evidence points to dental surgical procedures as the etiologic factor in many cases of subacute bacterial endocarditis. Bacterial endocarditis is always an independent bacterial focus in the heart valves and inasmuch as no treatment is known to remove this focus, therapeutic measures fail. In persons with pre-existing rheumatic valvular lesions or congenital defects of the heart, localization of *Streptococcus viridans* in such vulnerable organs during transient bacteremia may initiate bacterial endocarditis. Prophylactic measures must be used to prevent this fatal condition.

(Continued on page 25)

¹Siegmund, H.: Ueber die akute Phlebitis der Halsvenen bei odontogenen Kiefererkrankungen, als Ausgang septischer Allgemein-Infektionen, Deutsche Zahnheilk. 74, 856/61.

²De Takats, G.: Resting Infection in Varicose Veins, Am. J. M. Sc., 1:57 (July) 1932.

³Meyer, Otto: The Mechanism of Oral Focal Infection, DENTAL DIGEST, 46:208-210 (June) 1940.

⁴Budnitz, Edward; Nizel, Abraham; and Berg, Leo: Prophylactic Use of Sulfapyridine in Patients Susceptible to Subacute Bacterial Endocarditis Following Dental Surgical Procedures, J.A.D.A., 29:346 (March) 1942.

Clinical and Laboratory Suggestions*

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I. Anodynic Temporary Fillings

THE SENSITIVITY of cut vital dentine increases when exposed to saliva. This irritability also occurs under temporary stoppings and gutta-percha fillings presumably because of the water absorption and the resiliency of both materials; saliva apparently is sucked under such fillings during mastication.

The following procedure has been found successful in preventing painful temporary fillings:

1. Isolate the tooth with cotton rolls and dry the prepared cavity well.
2. Apply a small amount of saturated solution of thymol in chloroform. This may be done by "writing it in," pen fashion, with cotton pliers or with a small wisp of cotton (Fig. 1, Left).
3. Place the warmed and softened filling material immediately (Fig. 1, Right).
4. Wet a wisp of cotton or a piece of root canal paper point with a solu-

tion of thymol in chloroform. This may be packed into retention pits, which have been drilled for castings, and sealed with a bit of softened temporary stopping. At the next visit the pit will be clean, sterile, and non-sensitive.

Thymol acts as a bactericide and an anodyne, and its vehicle, chloroform, helps the temporary stopping or the gutta-percha adhere to the tooth and excludes saliva.

II. A Tempered and Sticky Gutta-Percha Filling

Base-plate gutta-percha, when ready for insertion, is often hot enough to elicit pain, is difficult to manipulate because of its rubbery quality, and often loosens from cavities. Because gutta-percha is tougher than temporary stopping, however, it would make a better temporary filling, if these drawbacks were overcome.

Gutta-percha can be easily handled, made sticky, and used at a low temperature (tempered) if it is heated to a high temperature (not burn-

ed), formed into a cone with the fingers, and dipped into oil of eucalyptol for from 5 to 15 seconds. It may then be inserted without reheating into the isolated and dried cavity preparation (Fig. 2). This treatment makes gutta-percha more plastic without impairing its excellent properties. The patient may not like the taste of the eucalyptol, but this is not too objectionable.

Temporary stopping may be treated in a similar manner to increase its plasticity, so that it may be used to advantage inside temporary shells or crown forms which may be teased off at each visit. One or two melted thymol crystals added to the plastic stopping decreases dentine hypersensitivity.

To use a metal shell again, moisten temporary stopping lining with eucalyptol; add a crystal of thymol; warm over a flame; and place over the dry preparation. It may be advisable to add a little new eucalyptol-dipped stopping to the lining in some cases.

1235 Grand Concourse.

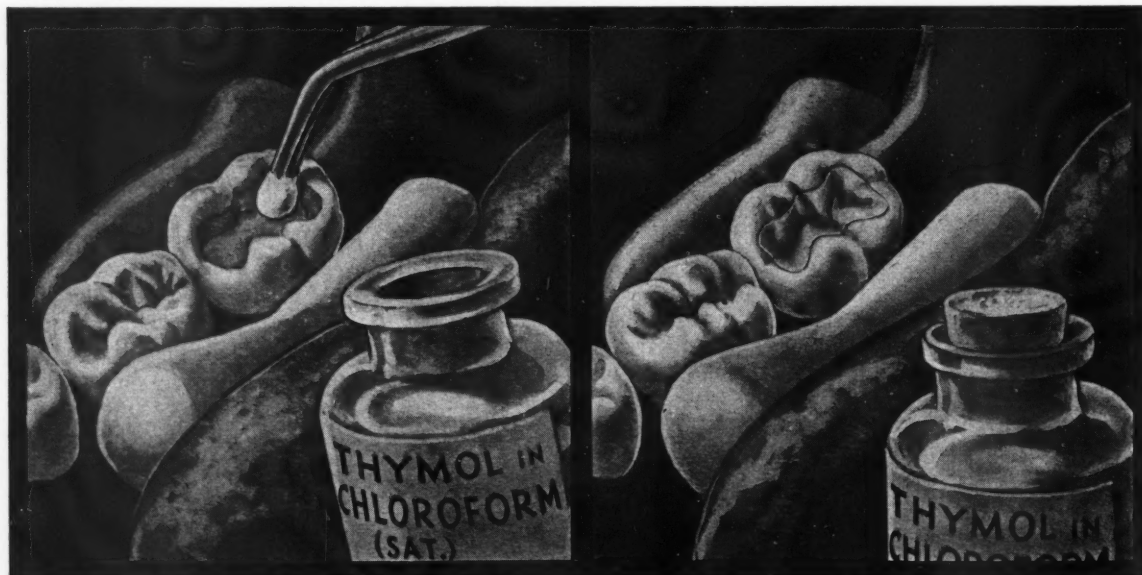


Fig. 1—Left: Thymol in chloroform solution being applied to prepared posterior cavity; tooth isolated by cotton rolls. Right: Same tooth, still isolated but filled with temporary filling material.

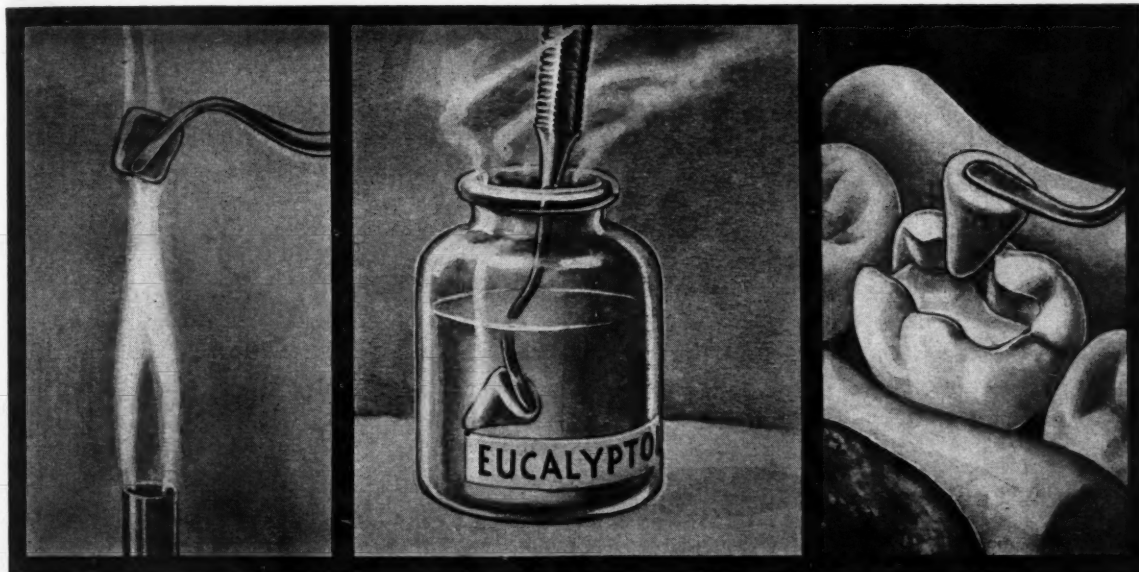


Fig. 2—Left: A square piece of base-plate gutta-percha is heated over a flame. Center: Hot gutta-percha in form of cone being dipped in eucalyptol. Right: Posterior preparation isolated with cotton rolls. Gutta-percha cone is plugged into cavity with plastic instrument.

Instructions in Roentgenographic Procedures for Dental Officers

(Continued from page 18)

This shows an accurate cross section of the teeth in a limited area.

1. The basic position of the patient's head is the same as for an occlusal view of the entire mandibular arch (Fig. 8). Place the film between the occlusal plane of the teeth, centered on the involved area (periapical film).

2. Vertical angulation, central ray parallel to deck; horizontal angulation, tube head rotated so that the central ray is directed slightly toward the median plane to parallel the long axis of the teeth in the involved area (Fig. 10). For anterior areas the vertical angulation should be altered so that the central ray parallels the long axis of the teeth.

3. The exposure time depends on the speed of the film used; for radiatized film, 3 to 3½ seconds.

Technique for Lateral Jaw Roentgenography³

Including Ramus and Molar Area—

³Lateral jaw technique based on teachings of Doctor Clarence Simpson, St. Louis.
⁴The February issue will contain descriptive material on the construction, care, and use of the cassette with intensifying screens.

1. Fasten the cassette⁴ to the headrest in a vertical position. A gauze bandage may be secured around the central pin of the spring clamp on the back of the cassette, drawn back over the bow of the headrest, crossed, and tied (Fig. 11).

2. Drop the armrests and seat the patient crosswise in the chair so that the side to be roentgenographed is next to the cassette (Fig. 12).

3. The patient's head should be in an erect position, the sagittal plane of the face perpendicular and parallel to the cassette, and the head thrust forward so that the cervical spine will be angled dorsally to prevent superimposition of the spine over the ramus (Figs. 12 and 13).

4. The pointed cone should be set at an angle of minus 25°, and the tube head lowered to a position where the central ray will pass beneath the near mandible and will record the mandible approximate to the cassette (Fig. 12). Target-film distance, 24 inches; exposure time, 1 second (with screens).

*Including Bicuspid Area—*1. The

initial position is the same as for the ramus and the molar area.

2. Rotate the patient's head until the cheek touches the cassette (about 20°), being certain that the sagittal plane of the face is perpendicular (Fig. 14).

3. The angulation, target-film distance, and exposure time are the same as for the ramus and molar area.

*Including Cuspid and Incisor Area—*1. The initial position is the same as for the ramus and molar area.

2. Rotate the head until the nose is flattened against the cassette, being certain that the sagittal plane of the face is perpendicular (Fig. 15).

3. The angulation, target-film distance, and exposure time are the same as for the ramus and molar area.

The technique described is for the metal cassette with intensifying screens. If the cassette and screens are not available, the cardboard film may be substituted by increasing the exposure time from 4 to 6 seconds; however, the results will not be as satisfactory as when screens are used.

U. S. Naval Training Station.

Facial and Functional Rehabilitation Without Plastic Surgery

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DIGEST

A case of facial reconstruction is reported in which corrective dentures, rather than plastic surgery, were employed to restore function and improve appearance.

The patient had incurred bilateral mandibular fractures which resulted in osteomyelitis of the right side, with consequent distortion on healing, and atrophy of the left side.

A procedure is described

whereby dentures were constructed which would be comfortable and restore masticatory ability and which would plump out the right side of the mandible sufficiently to force normal activity of the atrophied right facial muscles as well as to improve the appearance of the distorted lip.

War casualties will doubtless present similar cases for reconstruction without recourse to plastic surgery.

History of a Case

A man, aged 35, was edentulous with atrophy of the mandible and the right facial muscles, and a distorted lower lip (Figs. 1, 2, and 3). The patient presented for restoration of muscle function and facial appearance without recourse to plastic surgery. The patient had incurred bilateral fractures of the mandible when he struck the mandibular symphysis on falling from a stepladder. He had worn partial upper and lower dentures before the accident; the fractures necessitated removal of the remaining teeth.

The left side of the mandible had



Fig. 1—Distorted lip, atrophy of right facial muscles and of mandible after bilateral mandibular fractures had been corrected with bone graft and osteomyelitis of right side of the mandible had been treated (front view).



Fig. 2—Left profile. Note distortion due to atrophy of right facial muscles.



Fig. 3—Right profile. Muscles of right side of face atrophied. Post-operative wound (bone graft to mandible) healed.



Fig. 4—Healed mandible showing atrophy and loss of normal landmarks.

atrophied on healing and the right side had necrosed. The patient had been hospitalized for more than two years for treatment of the osteomyelitis. The well known orthopedic surgeon, Fred H. Albee of New York City, successfully treated the osteomyelitis, and grafted a splint from the patient's tibia to the right side of the mandible; this resulted in firm union of the mandibular sections. It was impossible to prevent atrophy of the mandible, so that many of the normal landmarks were lost. The appearance of the healed mandible is shown in Fig. 4 and may be deduced from the dentures (Figs. 5 and 6) and from Fig. 7, which show the under side of the final lower denture.

Problems

Social and Insurance Problem—The patient claimed permanent disability. The right facial muscles had atrophied, and nerve degeneration seemed to be involved. Plastic surgery had been advised but the patient

refused it, saying that he did not want to undergo any more operations.

Functional Problem—The patient could not masticate properly, which necessitated a soft diet. Atrophy of the muscles of the right side of the face was causing distortion of the left side of the face.

Technical Problem—The healed mandible had atrophied in all planes. Following the bone graft, the right buccal pouch, the bony plateau, and the retromolar pad on the right side,

and the entire lingual extension of the mylohyoid ridge were lost.

Healing by first intention of the fracture of the left side of the mandible had resulted in an abnormally deep buccal pouch. There was also an exaggerated overhang of the retromolar pad, causing an excessively deep lingual extension of the mylohyoid ridge. This extension of the mylohyoid ridge produced a deep lingual groove, which later proved useful in anchoring the lower restora-

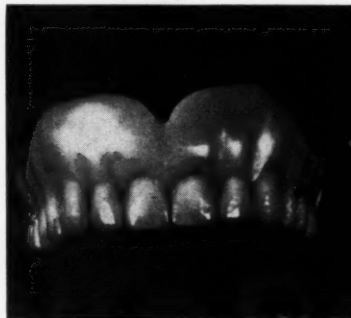


Fig. 5—Final upper acrylic denture.



Fig. 6—Final lower acrylic denture (right side view).

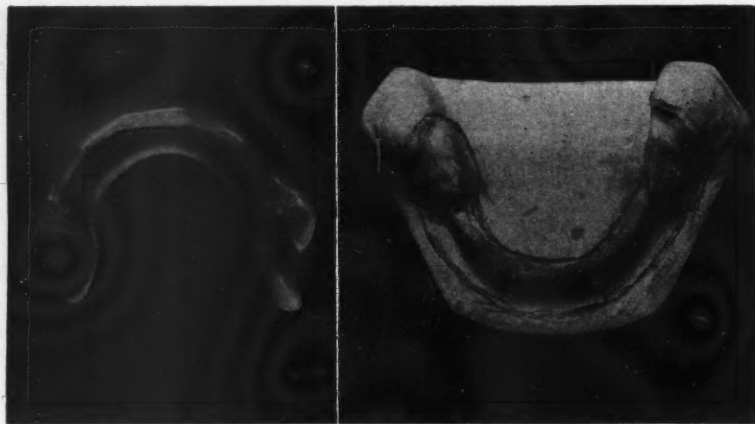


Fig. 7—Final lower denture (under side). Note accentuated mylohyoid ridge and deep lingual flange on left side.

Fig. 8—Cast of healed mandible showing atrophy and loss of normal landmarks.

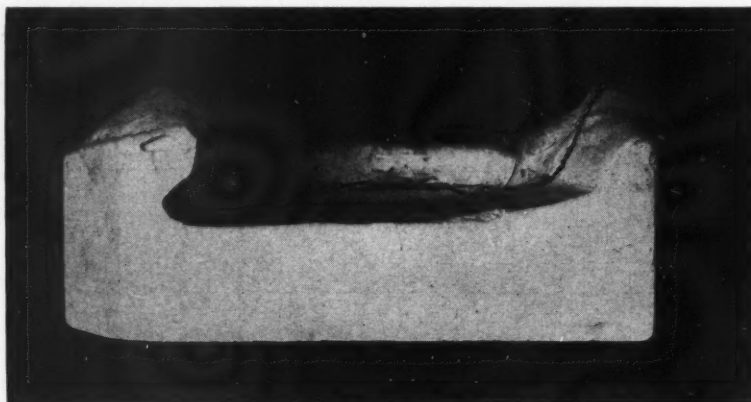


Fig. 9—Posterior-anterior view of cast showing atrophy of floor of mouth.

Fig. 10—Function restored to right facial muscles and distortion of lips and jaw corrected by dentures.

Fig. 11—Facial appearance improved with corrective dentures in place.



tion. Atrophy of the floor of the mouth is shown in the posterior-anterior views of the cast (Figs. 8 and 9). The tongue adjusted itself to this conformation as well as to the restorations.

The technical problem resolved itself into two phases: (1) It was necessary to construct dentures that would be comfortable and restore masticatory power; and (2) it was necessary to plump out the right side of the mandible enough to force normal activity of the atrophied right facial muscles and to improve appearance.

Restorative Procedure

Upper Denture—The upper restoration was made in the usual manner. A muscle-trimmed compound impression was taken, a base-plate tray made, and a Kerr's paste impression taken in this tray. Care was taken to allow functional-balanced occlusion with the lower denture.

Lower Denture—The lower denture was made in successive stages:

1. A compound impression was taken, and from it a vulcanite tray was made.
2. A paste impression was made in this tray. The paste impression showed more detail than did the impression in compound; it also revealed

the necessity and the possibility of getting more detail of the deep lingual flange on the left. The same technique of using the tray and taking the impression was repeated six times to get necessary detail. The vulcanite tray was modified slightly after each attempt until the exact detail was obtained the sixth time.

3. The bite was established and the teeth set up in the usual manner. (The upper denture was completed in acrylic material at this point.)

4. The lower denture was set up by means of a chewed-in compound block in order to obtain functional-balanced occlusion.

5. The lower denture was completed in acrylic.

The patient now had satisfactory and efficient dentures which felt comfortable in his mouth and with which he could chew and eat normally.

Functional and Esthetic Corrections

Function was restored to the atro-

phied right facial muscles and appearance was improved without resorting to plastic surgery:

1. The functioning lower denture was used as a base upon which to apply a modeled mass of acrylic material to plump out the right side of the face.

2. Models were made in several stages until the lower lip was pushed back to its normal position and contour, and the right cheek plumped out to its proper contour and expression.

3. In the preparation of each model, wax was applied to the acrylic lower case and carved to approximate the desired end.

4. When the patient was able to chew and eat well, and his face felt comfortable and looked natural, the lower case was reprocessed in acrylic material. This finished denture included the shape of the functionally balanced transitional denture as well as the plumping-out on the right side. Figs. 6 and 7 show the right aspect

(Fig. 6) and the under side (Fig. 7) of the final lower denture. The under side clearly shows the contours which solved the problem of the lost right landmarks and shows the use of the accentuated mylohyoid ridge and deep lingual flange on the left side.

Comments

The result was esthetically and functionally satisfactory (Figs. 10 and 11). Function of the right facial muscles was restored and the improvement has continued. The result of this treatment shows that the accident to the face caused no significant nerve injury or atrophy as the behavior of the facial muscles suggested. The muscles of the entire face are now virtually in normal balance. The patient's appearance is no longer a handicap in getting a position, and he can smile normally and without embarrassment.

4 West Fifty-Seventh Street.

Complications Following Extraction of Teeth

(Continued from page 19)

Head Complications—Venous congestion predisposes to postoperative complications in the head. Venous congestion is due to lack of complete drainage through the inflamed jugular vein. Swelling of the jugular endothelium narrows the lumen of the vein and interferes with venous drainage from the head. I was able to relieve a severe and painful inflammation (osteomyelitis, periostitis) in the jawbone after tooth extraction within a few hours by treating the jugular veins with leeches.

Meningitis—Meningitis or cavernous sinus thrombosis, which may follow tooth extraction, often proves fatal if congestion within the head is not relieved in time by removing the inflammatory swelling within the jugular veins.

Recently I treated a patient who had developed meningitis following

the extraction of an impacted tooth. He had been amaurotic for several hours. Both iliac veins were inflamed and infiltrated. The meningitis and eye symptoms disappeared in about eight hours after the leech treatment of the jugular veins. The temperature became normal in the same time. This result shows the causal relationship of the brain symptoms with the latent infection in the jugular veins immediately after tooth extractions.

Prophylactic Measures

Having observed that the common cold responds favorably to the application of cold compresses (Priessnitz compresses) around the neck, I concluded that the effect is due to an alleviation of the inflammation of the jugular veins. The sensitiveness of the inflamed jugular vein is decreased or disappears in a case of the common

cold after the application of wet cold compresses around the neck while the patient rests for two hours following extraction. The compresses stimulate the capillaries and prevent stagnation of blood. The compress consists of an ordinary kitchen towel, folded 3 inches wide, which is dipped in cold water. The compress should be covered with a piece of pure wool to prevent evaporation of the water. In some cases, in addition to the application of the cold compresses, I prescribe 20 grains of sulfathiazole in tablet form to be taken immediately after extraction.

Every dentist realizes that as a rule teeth should not be extracted during an acute infection, as the increased absorption of pathogenic organisms or their toxins may seriously aggravate the infection.

200 West Fifty-Fourth Street.

The Editor's Page

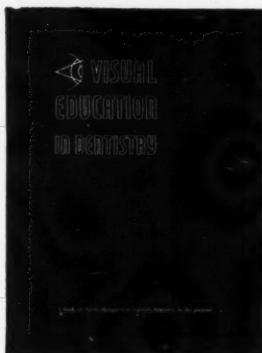
OUR COLLEAGUES in military service are practicing a kind of dentistry different from that which they knew in civilian life. The primary mission of the Medical Departments of the Army and Navy, of which the Dental Corps are parts, is to make many men ready for combat as quickly as possible. The idea is to give service to the largest number. The dentists in the Army and Navy Dental Corps are preparing men to fight. They are relieving pain and giving attention to urgent dental conditions. Esthetics is not a large factor in military dental treatment. So-called luxury dental care—gold inlays, porcelain jacket crowns, and fixed bridges—are not given to soldiers and sailors. The dental care that is given—extractions, amalgam and silicate restorations, and some prosthetic service—is generally of a high type, although in some military installations dental officers are required to speed up production to a point where quality suffers. Early in the period of the national alarm, the speed-up method was imperative to prepare as many men as possible for combat duty. It was a necessity of the moment. From this speed-up in production, impressive figures were developed which spoke eloquently of the number of extractions made, restorations placed, and dentures constructed. Now that the period of feverish preparation is over, the speed-up should be slackened and the emphasis shifted from quantity production to quality care: for the good of the soldiers and sailors as well as for the dental officers.

There are dour prophets who predict that the speed-up method of dental treatment in the Army and Navy and the exclusion of some forms of dental treatment will result in the destruction of dental values and the degradation of the profession. These prophets say that the standards of dental care will be so despoiled that quality service will not be given by these dentists when they return to civilian practice. This prophecy is absurd. It is as absurd as saying that the quality of architecture in America will suffer because barracks which are built for military purposes are unsightly and poorly conceived architecturally. The barracks are made to

serve utilitarian and immediate functional purposes. The same is true of military dentistry. Most of the dental officers, when they return to their home communities, will pick up the loose threads of their lives. If they performed dental services of a high quality before they entered military duty, they will insist on the same high quality when they return. If they were indifferent practitioners before they entered Service, they may be more indifferent when they return to private practice. Anyone talking to dentists in military service is impressed with their zeal to keep in touch with modern procedures in dentistry, many of which they are not practicing now.

One way in which we who remain in civilian life can make a contribution to the welfare of the dentists in Service is by contributing to the literature of the profession. The officers wish to keep in touch with everything that is modern in dental practice. The only way they have to keep this rapport is through the dental literature. Recently we received a letter from a dental officer who said that fifty of his colleagues in Service had read one copy of this magazine. This shows how anxious these men are to keep abreast of modern developments. To make it somewhat easier for the men in Service to keep up with the literature, we give free subscriptions to all dentists in the Service who were formerly subscribers to this magazine.

We are hearing from many quarters that an immense postwar job confronts the profession. Dentists will be returning home, reorganizing their lives, and setting up in practice. For many it will be a difficult readjustment; harder for many than it was when they first entered practice. They will need help and understanding from their colleagues and professional societies. But we have an immediate job, we civilian dentists. We can do something now to help the men in Service. We can contribute to the literature of the profession and, by so doing, acquaint the men in Service with the present procedures in private practice. By so doing, we can narrow the gulf between civilian and military practices.



Not a New Edition But . . .

ANOTHER REPRINTING (the seventh)

The demand for copies of *Visual Education in Dentistry* has made it necessary for us to reprint the booklet. This is not a new edition; it is a new reprinting; the booklet is the same as that which has been available for two years.

A dentist has written to us: "*Enclosed is check for \$2.00 for two copies of Visual Education in Dentistry. The third copy I have is worn out from handling so much. Its worth to me can hardly be computed.*"

Perhaps your copy is worn and needs to be replaced now. Or, if you have never used these charts in your practice, we know you can use them to advantage. The new reprinting sells to regular subscribers to *The Dental Digest* at the same price as before, \$1.00. To non-subscribers the price is \$2.00 unless purchased with a subscription.

The coupon below is for your convenience.

Contents

(A new reprinting [the seventh] recently completed)

1. Dental Conditions
2. Development and Eruption of Teeth
3. The Progress of Tooth Decay
4. Why Construct a Bridge?
5. How Irregularities of the Teeth Affect the Face
6. Modern Porcelain Restorations
7. The Expense of Poor Dentistry
8. The Development of Root-End Infections
9. A Stitch in Time Saves Nine
10. When the Dentist Fills the Tooth
11. "Things Are Not Always What They Seem . . ."
12. The Development of Jaws and Teeth
13. Diseases of Teeth and Trees
14. The Collapsed Face
15. "Be Not the Last to Lay the Old Aside . . ."
16. The Foundation's the Thing
17. Insulation
18. "One Rotten Apple May Spoil a Bushel"
19. The Circulation of the Blood
20. Pyorrhea Treated or Neglected
21. The Action of Local Anesthesia
22. "A Little Neglect May Breed Mischief . . ."
23. The Fifth Cranial or Trigeminal Nerve
24. Danger Begins at Six
25. How a Full Denture Fits
26. How the Loss of Teeth Affects the Face
27. The Danger from the Impacted Tooth
28. What Does the X-Ray Show?
29. The Requirements of a Correct Restoration
30. Development of the Skull

The Dental Digest

1005 Liberty Avenue, Pittsburgh 22, Pa.

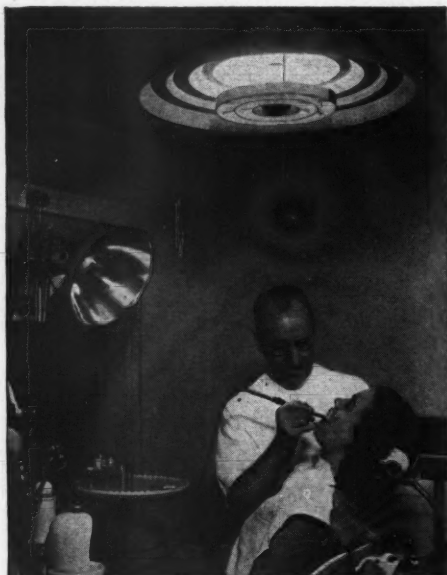
Enclosed is \$..... Please send copies of Visual Education in Dentistry promptly.

Doctor

Address

City State

Dealer's Name



← "G-V" Standard Flush Type
for ceiling under 10 feet high

↓ "G-V" HIGH CEILING type
for ceiling over 10 feet high



Ideal "Working Light" . . . day and night

Many a doctor with a Castle "T-V" Spotlight for intra-oral work relies on a commercial lighting fixture for general illumination in his operating room. Usually these commercial fixtures do not supply the proper quality or quantity of light around the dental chair.

The "G-V" (General Vision) Light was especially designed for doctor's offices. It gives proper shadow-reducing light all over the doctor's working area plus fine general room lighting. It reduces eye strain and supplies a soft restful light without glare. Ask your dealer for the complete story of this fine quality shadow-reducing "day and night" light.

WILMOT CASTLE COMPANY, 1123 University Ave., Rochester, N. Y.

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COGSWELL'S

"DENTAL ORAL SURGERY"

*A text book for the general practitioner
. . . and for the man who specializes.*

Price, \$10

Through your dealer, or direct

THE DENTAL DIGEST

1005 Liberty Ave.
Pittsburgh, Pa.

Contra- Angles



Nurses Aides . . .

When the Office of Civilian Defense was first organized, the thousands who volunteered for service looked upon their grim expected duties not without some excitement. The timid fellow, who had always been secretly awed by the fireman's bold crest-like helmet, prepared himself for the rôle of an auxiliary fire fighter. Those who were impressed by the policeman's rugged manner found themselves volunteering for police activities: twirling clubs, wearing stars, blowing whistles. Less robust souls signed up for jobs as plane spotters and gas-decontaminating squads. Thank God, these volunteers never have had to test their skills in an actual emergency.

Among the volunteers were those who signed up for the nonglamorous job of Nurses Aide. They have found work to do: bedpans, brimming full, to be emptied; tired backs to be rubbed; temperatures to be recorded. Thousands of young women in the United States are performing worthwhile duties every day as Nurses Aides for the people who are sick and injured, not from enemy action but from the ordinary stresses and strains of life. Those who train for the more exciting jobs may never find "incidents" for their skills, but the Nurses Aides are functioning valiantly and well.

Mileposts . . .

A third of a century is not a long period in history. The period from 1910 until the present, however, has seen many major shifts in emphasis in the dental profession. This changing scene is well demonstrated in the dental literature of 1910.

While reading about the proposed

"The tooth, the whole tooth... and the gums!"



Brushing OCCLUSAL SURFACES with the D. D. TOOTH BRUSH

THE correct brushhead of the D. D. Tooth Brush gets at the grooves, fissures and pits of the occlusal surfaces of the posterior teeth. Impacted food particles and other debris are effectively removed.

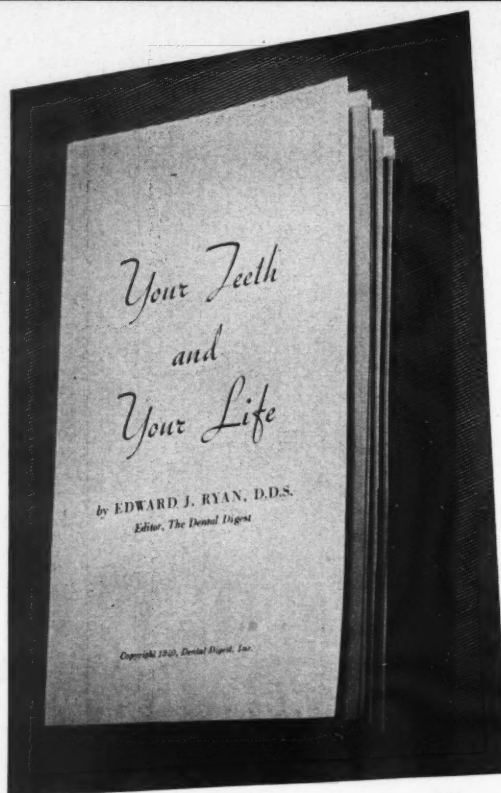
The D. D. Tooth Brush, with its scientific, twisted handle, permits easier control of the stroking procedure for more efficient brushing

of all exposed tooth surfaces. The brushhead of the D. D. Tooth Brush is small, the bristles resilient, its tufts well spaced for greater interdental penetration.

The Two Row D. D. Tooth Brush or the Three Row Brush are both modern oral hygiene aids for tooth brushing and gum massage.

**Bristol-Myers Company, 630 Fifth Ave., N.Y.C., 20
Dept. 2**





\$1.00 for 25 copies

This booklet (see illustration) is the answer to your desire for ethical educational material for patient distribution.

We know it will fit into your plans but it costs only \$1.00 for 25 copies for trial purposes. Once you start using *Your Teeth and Your Life* in your patient education program you'll want to use the booklet continuously. The booklet will help you help your patients. It is constructively written in lay language, illustrated with charts that tell the essential story. Dentists thus far have used over 180,000 copies.

We could tell you much about the booklet but the better way is for you to see it . . . it won't take you long to decide to use this ideal material in your practice. Send the coupon today. You may remit direct, or be charged through your dealer.

100 copies, \$3.00. A discount applies if 500 or more copies are purchased at one time.

The Dental Digest
1005 Liberty Avenue, Pittsburgh 22, Pa.

Here is \$1.00 for 25 copies of *Your Teeth and Your Life*. I want to determine if this is the booklet I have been wanting for my patients.

Dr.
Address
City State
Dealer

Congressional bill to give commissions to dentists in the Army,¹ I came upon the *Items of Interest* of May, 1910. The advertising section of this magazine is as significant of professional changes as is the text.

In May, 1910, postgraduate correspondence courses were being blatantly offered to dentists who wanted more knowledge. One could become an oral surgeon by "clipping the coupon" and taking a mail-order course.

In May, 1910, patients who insisted on furnishing their own dental supplies were being portrayed. Said one high-collared, humorless-looking patient, with hand on hip, "I insisted on Opara, supplying the material myself." The picture showed a patient accosting the dentist in his reception room. Firmly held in the patient's hand was a box of Opara. Apparently Opara was the Magi's formula to "cure abscesses quickly and surely." We have indeed come a long way since the time when patients stepped into dentists' offices with dental supplies and medicaments in their pockets.

In May, 1910, fancy glass cases which looked something like bird cages were offered to the profession as "fume sterilizers." The psychic powers of sterilization were probably more potent than the chemical fumes which exuded from these boxes.

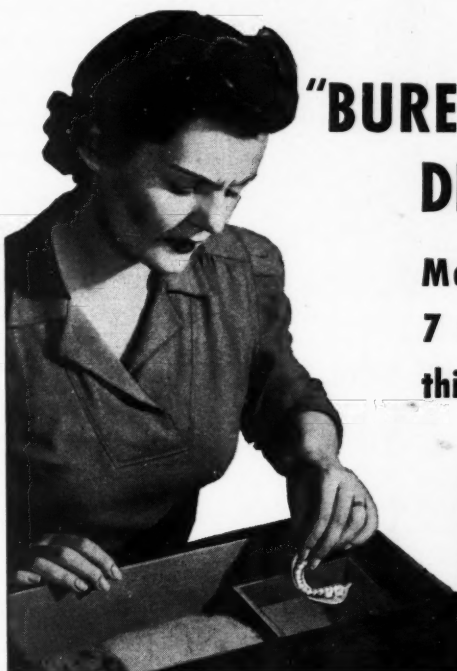
In May, 1910, one of the first hospitals in the country offered an internship to dentists.

In May, 1910, in the classified advertising section of the magazine, a dentist was asking unashamed for "a lady assistant for general prophylaxis." There was no mention of a dental hygienist; such people were unknown. This dentist was looking for a woman who would like to do teeth-cleaning on the side.

In May, 1910, cocaine, morphine, and codeine were being advertised to the profession, and presumably were being injected into people and used indiscriminately. God was good to many dentists in those days; otherwise the fatalities would have been many.

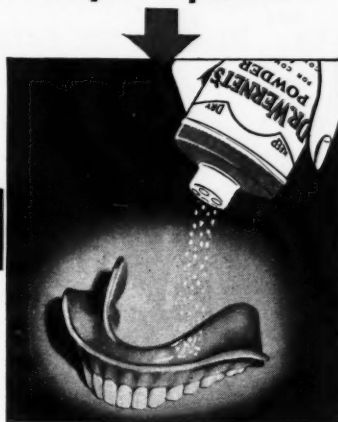
(Continued on page 32)

¹Items of Interest, 32:5 (May) 1910.



"BUREAU-DRAWER" DENTURES

May be avoided in
7 out of 10 cases by
this simple expedient



"I don't use them to eat with"

—you hear it many times from patients who become discouraged with their new dentures during the critical adaptation period. Through no fault of the dentist, many a denture becomes a "Bureau drawer" denture—to be used and worn only on special occasions.

In 7 cases out of 10, a gentle dusting of Wernet's powder would make all the difference, hasten the patient's adaptation to the denture, promote satisfaction with the dentist's work, remove the new plate from the "Bureau drawer" classification.

Impartial laboratory tests prove Dr. Wernet's powder to be 26.1% whiter and purer than the average of leading competitors; 50% more viscous (for maximum security) and 46.5% more absorbent (for faster denture control).

*Free supply on request to Wernet Dental Mfg. Co.
Dept. 74-A, 190 Baldwin Ave., Jersey City, N. J.*



Dr. Wernet's powder is acceptable on sight to the patient, easy and pleasant to use because of its delicacy and purity. It helps adapt the patient to the new denture and is good insurance against unfounded dissatisfaction or criticism.

So Pure You Eat It in Ice Cream
The basic ingredient in Dr. Wernet's is the same as is used in the making of ice cream.

DR. WERNET'S POWDER

ADAPTS THE PATIENT TO THE DENTURE



Pin-up picture for the man who "can't afford" to buy an extra War Bond!

YOU'VE HEARD people say: "I can't afford to buy an extra War Bond." Perhaps you've said it yourself... without realizing what a ridiculous thing it is to say to men who are dying.

The very *least* that *you* can do is to buy an *extra* \$100 War Bond. In fact, if you take stock of your resources, you will probably find that you can buy an *extra* \$200... or \$300... or even \$500 worth of War Bonds.

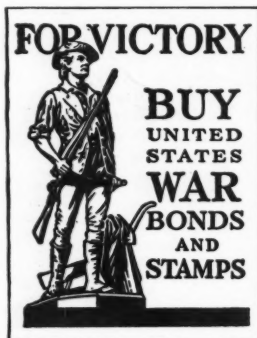
Sounds like more than you "can afford?" Well, young soldiers can't afford to die, either... yet they do it when called upon. So is it too much to ask of us that we invest more of our money in War Bonds... the best investment in the world today? Is that too much to ask?

**Let's all
BACK THE ATTACK**



THE DENTAL DIGEST

This is an official U. S. Treasury advertisement—prepared under auspices of Treasury Department and War Advertising Council



In May, 1910, one imaginative soul tried to give the name of "crownand-bridgeology" to the science that treats of "the intelligent, economical, efficient, and speedy construction of crowns and bridges." We should all give praise that this well-intentioned wordsmith suffered defeat.

In May, 1910, the copy writers for nostrums were as busy as they are today. Describing one mouthwash, an exuberant copy writer had this to say: "It is not an ineffectually weak solution of those aromatic substances which are destructive to pathogenic micro-organisms only when applied in the form of concentrated solution. It does not merely impart to the surfaces to which it is applied an agreeable odor but simply disguises putrefactive fetor. It does not bid reliance and in return abet ruin." What the copy writer was trying to say was that his swill was "good stuff" and that if you used it often and conscientiously, health and vigor would be yours. To keep the record straight, the product is no more, but has gone the way of the fellow who wrote the copy.

In May, 1910, a prominent dentist of Providence, Rhode Island, presented an excellent paper on the etiology and diagnosis of facial neuralgia. The dentist was Albert L. Midgley, to this day a prominent figure in the profession. Doctor Midgley illustrated his splendid paper with eight lateral x-ray plates—which was something in 1910. In May, 1910, Doctor Midgley advocated that "the x-ray is indispensable and of supreme value."

In May, 1910, the pulpless tooth was a topic under discussion. Prominent dentists at that time felt that the pulp should be removed routinely from the abutment teeth before bridges were constructed. Said the eminent W. D. Tracy of New York: "There has been a revolution in regard to the treatment of pulps in teeth that are to be used for abutments. The observation and experience of those who have been doing the work has resulted in the consensus of opinion that pulps should be taken out, and I believe it is the best, and, in fact, the only practice to follow. Now and then we may utilize a tooth for bridge abutment with live pulp, but it

The coming of global war has emphasized the round-the-world recognition of G.E. products and of the friendly G.E. symbol.

Dentists the world over have long been acquainted with the G.E. Model CDX dental x-ray unit; and in answering their call to duty are finding the dependable CDX, now on a big wartime job, doing its duty in the world's remote lands as well as on the home front.

Always the G.E. symbol has been at home in far-away places; its world-wide reputation, increasing through years of war and peace, confirms the judgment of every CDX user.

GENERAL ELECTRIC X-RAY CORPORATION
1012 JACKSON BOULEVARD CHICAGO (12), ILLINOIS, U. S. A.

A Friendly Symbol The World Over



Today's Best Buy - U.S. War Bonds



HELPING TO BUILD *A Happy New Year!*

"Happy New Year" is no longer just a wish; it is a promise—a promise that is underwritten by our armed services—a promise expressed in guns, tanks, ships, planes and the many other things coming off our production lines. The dental profession at home is a vital part of the great army of workers who are helping to make that promise a reality.

During this period of unprecedented production untold numbers will learn what dental care can mean in better health, greater happiness, and increased efficiency. Untold numbers will learn that dental treatment need not be a dreaded painful experience. In busy practices throughout the country McKesson nitrous equipment is saving dentists valuable time and energy and giving patients a new concept of dental treatment.

Plan for a McKesson pain-controlled office now. We will be glad to tell what McKesson equipment is doing for others; what it can do for you.

NARGRAF



EASOR

EUTHESOR

NEXT OF KIN . . . *talked too much!*

Telling a friend the number of John's regiment . . . or where he is now . . . or his kind of training . . . or about his inoculations . . . or *any* little thing about his army life, may seem harmless to *you*.

But Axis espionage relies on millions of sociable Americans telling friends these little things. Hundreds of such random phrases . . . pieced together . . . reveal *big* military secrets!

Don't repeat even little things about our war effort unless they've been published or broadcast. Think *before* you talk!

is very, very rare. In my own practice I would seldom use a tooth with a live pulp in it for a bridge abutment." We have improved our conception of pathology in the last third of a century.

Appointments for Youth . . .

Colonel Leonard Rowntree, Medical Director of the Selective Service System, is responsible for the statement that 75 per cent of youths at eighteen are acceptable for military service, while 75 per cent of the men at forty-five will be rejected for service because of physical disabilities, diseases, deformities, and disorders. The emphasis is certainly on young men and women for the armed forces. The Council on Dental Health of the American Dental Association, through its Victory Corps and Physical Fitness Program, has encouraged dentists in civilian practice to give priority appointments to high school boys and girls who will soon be called for military duty.

There is much more to be done, however, than merely giving priority appointments. We must give these boys and girls a high order of treatment, unhurried, and, at the same time, within the pocketbooks of average families. Whenever we place a filling in the tooth of a young person, we must visualize this boy or girl in some faraway outpost where a toothache or any form of dental disturbance might lower his resistance, increase his nervous irritability, and endanger his life and the lives of his comrades. The Council on Dental Health emphasizes that the kind of response that we show to this urgent call to help prepare the youths for military life "will do much to determine the professional regard shown by governmental agencies in the future." That is true. We have an excellent opportunity to solidify our public relations.

The Council on Dental Health is planning an all-embracing program for dental care at all economic levels. How well the dental profession responds to the Victory Corps program will indicate the kind of voluntary support that may be expected for the other projects.—E. J. R.



SQUIBB Says it's Better

SQUIBB

DENTAL PRODUCTS

Squibb Dental Cream

A safe, effective dentifrice made with Squibb Milk of Magnesia—a fine antacid. Smooth, creamy and pleasant to use.

Squibb Angle Toothbrush

Has a small brush head on a thin shank, bent at an angle like your mouth mirror. Has high quality, long-lasting "Synton"* (synthetic) bristles.

Squibb Oral Perborate

Essentially sodium perborate, free-flowing and pleasantly flavored. May be used on the toothbrush, or in solution as a mouth wash, when indicated.

* "Synton" (Reg. U. S. Pat. Off.) is a trade-mark of E. R. Squibb & Sons.

THIS war with its rationing and its priorities has not been an unmixed hardship. More than once, what started as a search for a replacement item ended in the discovery of ingredients which contributed to the making of a better product than the original. This is true of Squibb Tooth Powder.

Packaged in a new, attractive, compact, non-metallic container, vapor-, dust- and moisture-proof, Squibb Tooth Powder is made by a new formula. It is improved in consistency or "body"; it clings better to the bristles during the brushing; its content of magnesium hydrate neutralizes mouth acids where it comes in contact with them; it is delightfully flavored . . . 170 tests are applied as safeguards to quality.

E·R·SQUIBB & SONS

MANUFACTURING CHEMISTS TO THE MEDICAL AND DENTAL PROFESSIONS SINCE 1858

DeWitt Clogless Saliva Ejectors



Amber

Frosted

Clear

Small

Medium

Large



Package of 1 dozen

4 Amber @ .60

1 small—2 medium—1 large \$2.40

4 Clear @ .40

1 small—2 medium—1 large 1.60

4 Frosted @ .65

1 small—2 medium—1 large 2.60

\$6.60

**INTRODUCTORY PACK-
AGE, all sizes, all colors**

Price 1 dozen \$6.00

**COLORS appeal to the Patient
Right size insures COMFORT**

Trade Mark



Registered

P. N. CONDIT

Box 204, Back Bay

Boston 17, Mass.

V
V

**BUY WAR BONDS
AND STAMPS**

V
V

NOW

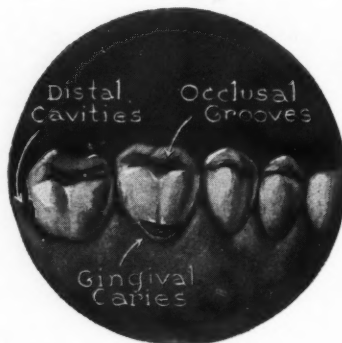
AVAILABLE



**BS
POLISHERS**
RUN COOL—SMOOTH
*they do not
throw and
scatter
abrasive*



Young DENTAL MFG. CO.
ST. LOUIS, MO.
ESTABLISHED OVER 40 YEARS AGO



**P
Prevents and
Arrests Decay**

You use copper cement for its germicidal action. Why not give child patients the maximum clinical benefits by using Ames Copper Cement, which contains over 90% cupric oxide—more than is found in any other dental cement in the market today? Ask your dealer. Write for technical booklet "Dentistry for Children." The

W. V.B. Ames
Company, Fre-
mont, Ohio.

AMES
DENTAL CEMENTS

Waterproof Medical Bag

A WATERPROOF medical bag, which is made of canvas with laced top and shoulder straps to fit the bearer, has been developed at Camp Ellis, Illinois, by Lieutenant Seymour B. Horwitz, D. C. The bag, which can be used as a life preserver, is doubly protected by a synthetic rubber lining. This new item of equipment, which has been accepted by the Amphibious Training Command, is described by The Medical Soldier as follows:

The bag will carry 50 pounds of equipment. Tossed out of a landing barge, it will support three men, and can be towed to shore and beached while the men seek cover. Lieutenant Horwitz became interested when men at amphibious centers told him that landing boats often got hung up on sand bars about 50 yards from shore, with deep water inside. The men frequently lost their equipment while trying to reach shore.

The bag, which was tested by engineers at an Amphibious Training Center in Florida, is now in quantity production.—From *Army and Navy Register*, 65:4 (January 1) 1944.

Callahan Award to Luckhardt

DOCTOR ARNO B. LUCKHARDT, professor of physiology at the University of Chicago and discoverer of ethylene gas as an anesthetic, is the 1943 recipient of the Callahan memorial award for accomplishment in the field of medical research. The award was presented recently by the Ohio State Dental Society to Doctor Luckhardt for his contribution to humanity and the healing arts.

Doctor Luckhardt's discovery of ethylene as an anesthetic came about when a rose dealer from Wisconsin appealed to the botany department of the University of Chicago for help in

ascertaining what made his roses turn yellow. Investigation showed that small amounts of ethylene gas were present in the gas used for fuel in heating the greenhouse and were escaping into the air. The ethylene, in effect, put the roses to sleep.

Hearing of the investigation, Doctor Luckhardt began a series of physiologic experiments with the gas. He found that he could anesthetize frogs and dogs with it, and as a final experiment had one of his associates administer the gas to him. This final test in 1923 proved that the gas is neither injurious nor dangerous to human life. It produces none of the nauseating after-effects of anesthetics such as ether, and it imposes no strain on the heart or kidneys.

Refusing an offer of more than \$100,000 for the patent rights to ethylene, Doctor Luckhardt gave the anesthetic to the world. (Recently the University of Chicago adopted a statute in the interest of science and of free enterprise; it provides that neither investigators nor the University shall profit from exploitation of discoveries through patents.)

Dental Supplies to Our Allies

DENTAL INSTRUMENTS, foot engines, and other supplies valued at \$5448.45, donated by the Medical and Surgical Relief Committee of America, were turned over to Doctor David S. K. Dai who accepted the Committee's gift for the National Health Administration Dental Board of Chungking, China. The six cases of supplies, explained Doctor Dai, will be distributed not only to the hard pressed dental clinics of free China but will also be used to train young Chinese student dentists. This training program is the most important task of the newly organized Dental Health Administration which is now concentrating on increasing the number of qualified dentists in China. At present, Doctor Dai declared, there are



RADIODONTICS

now takes on new importance

WITH manpower shortages becoming acute, with more and more of your colleagues in the services . . . your job's a bigger job than ever. Make radiodontics your ally; make radiodontic examinations the rule . . . and you help keep war workers working . . . multiply your own effectiveness . . . maintain high diagnostic and corrective standards.

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In your **ORAL HYGIENE** this month

"The Public Health Dentist Is Your Friend"

ORAL HYGIENE's \$100 monthly award went this month to Doctor Vern D. Irwin, Director of the Division of Dental Health of the Minnesota Department of Health, for his excellent three-page article, "The Public Health Dentist is Your Friend." Don't miss it.

"It is time," says Doctor Irwin, "that the public health dentist revealed his true character and explained some of the reasons for his existence."

"The Bravest Man I Ever Knew" is a dental officer, Lieutenant Herbert

ka College of Dentistry, wrote this stirring account for January ORAL HYGIENE.

"Dental Surgeon on the China Front," by Doctor W. W. Pettus, tells the fascinating story of Doctor Dimitri Alexandriavitch Afonsky. The author is attending surgeon at the Hsiang-Ya Hospital in Changsha, Hunan, China.

"Why Didn't I Do This Years Ago?" asks Doctor G. G. Bell of Ashland, Kentucky, in telling how he adjusted his practice to a wartime emergency.

"How to Kill a Dental Practice" appears again this month. Enlargements of this series are being shown at dental society meetings.

"What Looking Back Has Taught Me," by Doctor Gregor H. Glitzke, tells how he corrected errors in his own practice.

"So You're Taking Out a Patent" is a compact three-page article by Doctor Thomas J. Kivney who tells why expert advice is needed to protect the rights of the dentist-inventor.

Eight departments appear this month — including Picture of the Month, Military News, Editorial Comment, Ask Oral Hygiene, Technique of the Month, Dentists in the News, Laffodontia, and The Publisher's Corner.



Lieutenant Herbert Hawley (DC) USNR

Hawley (DC) USNR, who was so described by Lieutenant Commander Gordon Bruce. Doctor Bert L. Hooper, dean of the University of Nebras-

only 350 dentists to care for the teeth of 400 million Chinese.

In addition to the assortment of burs, chisels, mouth mirrors, denture teeth, explorers, syringes, and other equipment, each case contains a foot engine complete with extra parts and wheels. Salvaged and reconditioned, the foot engines, long discarded in America, have been used successfully by the Committee in outlying areas which are not equipped with electricity. The Committee has shipped these engines to the interior sections of China as well as to isolated Coast Guard stations in this country and in Alaska.

A graduate of the West China Union University and a Carnegie Research Fellow, Doctor Dai is in this country to study the public health phase of dental practice for the Chinese Dental Health Administration of which he is a member. The dental supplies, requested by the Chinese Health Administration, make a total of over \$42,000 donated to date by the Committee to various Chinese medical groups. These medical groups include the West China Union University Clinic in Chengtu, the New Life Medical Unit, the Hackett Hospital in Canton, the Friends Ambulance Unit, and the American Bureau for Medical Aid to China.

The Committee's donations to China are but a part of the Committee's medical aid program for the United Nations. Conducted by a nation-wide group of physicians, surgeons, and dentists, the Medical and Surgical Relief Committee has distributed medical, surgical, and dental equipment valued at over \$600,000 to the armed and civilian forces of the Allied nations. Vitamins, serums, drugs, surgery sets, emergency kits, antiseptics, and other supplies have been donated in answer to the thousands of requests from the United States Navy, military and maritime units of the Fighting French and Royal Norwegians, war-zone hospitals, needy welfare agencies, community nurseries, first-aid stations, and mobile clinics throughout the free world.

In Your January
Oral Hygiene

Dental Equipment Needs

ALTHOUGH the dental equipment needs of the Army and Navy will soon be satisfied, the policy of the War Production Board restricting the use of critical materials to the manufacture of dental equipment for military purposes only continues in operation. All military needs for dental equipment will have been satisfied by January 1, 1944, and the dental manufacturers will soon be obliged to close their factories unless the War Production Board regulation is changed to allow him to begin production for civilian needs. It has been estimated that there will be a potential market for about 10,000 complete equipments should the war end next year, but unless a strong effort is made to bring about changes in the present production program, there will be no stock pile on hand to meet this heavy demand. In issuing a call of warning on this subject, outgoing President J. Ben Robinson of the American Dental Association, said: "If the manufacturer is not permitted the necessary materials to enable him to continue operations in order to build up a reserve, there will be no source of supply from which returning dentists can secure the needed equipment, and they will be obliged to wait on manufacture—some of them for two or three years. This situation is really more critical than it appears and calls for the continued vigilance of the War Service Committee." — From *Army and Navy Register*, 64:9 (December 25) 1943.

THE USO

NEEDS

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Better Impressions

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IMPRESSION PASTE

PROPER RESISTANCE

PROPER ELASTICITY and PLASTICITY

PROPER SETTING ACTION

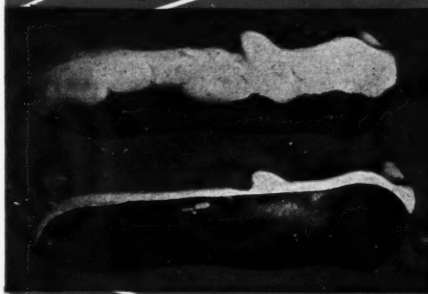
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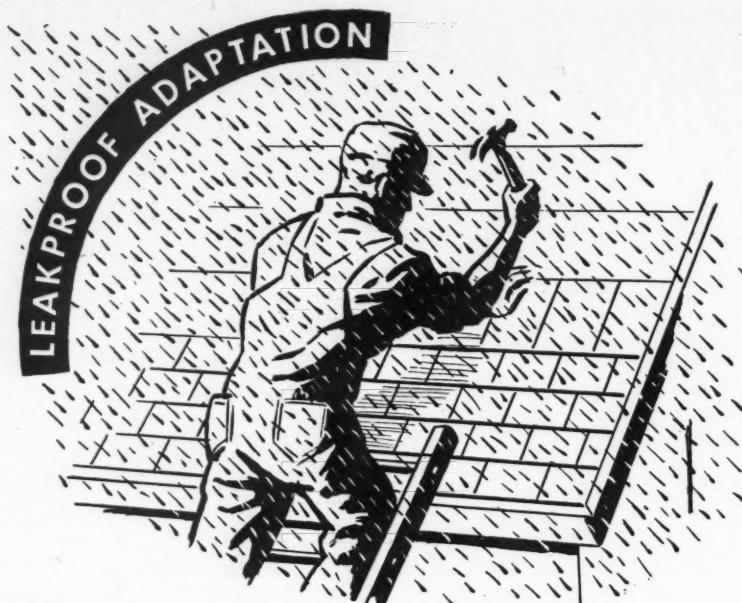
If you were AN AXIS AGENT . . .

. . . you'd know these instructions by heart: "Mingle with people. Keep your eyes and ears open. Report everything you hear. Don't try to judge its value yourself. Leave that to your superiors."

(These are known to be *actual* instructions!)

Axis espionage works on the bits and pieces principle. A phrase here . . . a conversation there . . . none important in themselves. But when carefully correlated with hundreds of other conversational scraps, they add up to . . . an important military secret!

Don't repeat even *little* things about our war effort unless they've been printed or broadcast. Think *before* you talk!



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From 10 ... 50 ... 200 random phrases about our war production or our boys in uniform, expert Axis agents piece together one important military secret which *you* may help betray ... just by being sociable!

Don't repeat even *little* things about our war program unless they've been published or broadcast. Think *before* you talk!

ADVERTISING INDEX

Ames Co., W. V-B.	36
Bosworth Co., Harry J.	52
Bristol-Myers Co.	29, 37
Castle Co., Wilmot	28
Caulk Co., The L. D.	2
Columbia Dentaform Corp.	52
Columbus Dental Mfg. Co.	3
Condit, P. N.	36
Cook-Waite Laboratories, Inc.	38
Corega Chemical Co.	4
Dental Perfection Co.	51
Dentists' Supply Co., The .4th Cover	
Eastman Kodak Co.	39
General Electric X-Ray Corp.	33
Getz Co., William	3rd Cover
Ideal Tooth Inc.	Insert
Interstate Dental Co., Inc.	41
Jelenko & Co., Inc., J. F.	48-49
Johnson & Johnson	8
Justi & Son, Inc., H. D.	5
Konformax Laboratories, Inc. ...	1
McKesson Appliance Co.	34
Merrell Co., William S.	50
Minimax Co.	46
Smith & Son Mfg. Co., Lee S. ...	3rd Cover
Squibb & Sons, E. R.	35
Universal Dental Co.	2nd Cover
Vernon-Benshoff Co.	6-7
Wernet Dental Mfg. Co.	31
Wilmot Castle Co.	28
Williams Gold Refining Co.	52
Young Dental Mfg. Co.	36

36 "Why shouldn't I
52 buy it?
37 I've got the
28 money!"
2
52
3

36 Sure you've got the money. So have lots of us. And
38 yesterday it was all ours, to spend as we darn well
4 pleased. But not today. Today it isn't ours alone.



41 "What do you mean, it isn't mine?"
49
8

5 It isn't yours to spend as you like. None of us can spend as we
like today. Not if we want prices to stay down. There just
aren't as many things to buy as there are dollars to spend. If
we all start scrambling to buy everything in sight, prices can
kite to hell-n'-gone.

34 "You think I can really keep prices down?"
50
46

ver If you don't, who will? Uncle Sam can't do it alone. Every
time you refuse to buy something you don't need, every time
you refuse to pay more than the ceiling price, every time you
shun a black market, you're helping to keep prices down.

35 "But I thought the government put a
ceiling on prices."
ver

ver You're right, a price ceiling for your protection. And it's up
to you to pay no more than the ceiling price. If you do,
you're party to a black market deal. And black markets not
only boost prices—they cause shortages.

6-7 "Doesn't rationing take care of shortages?"
31

28 Your ration coupons will—if you use them wisely. Don't
spend them unless you have to. Your ration book merely
sets a limit on your purchases. Every coupon you don't use
today means that much more for you—and everybody else
—to share tomorrow.

"Then what do you want me to do
with my money?"

Save it! Put it in the bank! Put it in life insurance! Pay off
old debts and don't make new ones. Buy and hold War
Bonds. Then your money can't force prices up. But it can
speed the winning of the war. It can build a prosperous
nation for you, your children, and our soldiers, who deserve
a stable America to come home to. Keep your dollars out
of circulation and they'll keep prices down. The government
is helping—with taxes.

"Now wait! How do taxes help
keep prices down?"

We've got to pay for this war sooner or later. It's easier and
cheaper to pay as we go. And it's better to pay more taxes
NOW—while we've got the extra money to do it. Every
dollar put into taxes means a dollar less to boost prices. So . . .

Use it up . . . Wear it out . . .
Make it do . . . Or do without

**HELP
US
KEEP**

PRICES DOWN

36 A United States war message prepared by the War Advertising Council, approved by the Office of War Information, and contributed by the Magazine Publishers of America

The Use of Zinc Oxide and Eugenol in Conservation

A. W. POOLE, I.D.S., Blackburn, England

"EXCELLENT AS this substance is, if correctly mixed, it has been in great disfavour in some quarters because of its unmanageable nature if not mixed stiffly enough, so before mentioning some special uses I will outline the method which I find best for achieving the desired consistency.

"In the first place batches of Zinc Oxide vary considerably in their setting times, and if one is unfortunate enough to get a powder which will not give reasonably quick setting mix, then one should try another source. Having found the right type of Zinc Oxide, the setting time should not be much longer than in the case of a normal silicate. Eugenol gives a quicker set than clove oil. To facilitate mixing, the slab should be warmed, and if the spatula (a wax knife is quite the best because of non-conducting handle and power which can be applied) be placed on the lid of the sterilizer from time to time the difficulty of obtaining the correct mix will be halved. The inclusion of a third ingredient such as resin is not recommended.

"Used as a lining the substance need not be mixed quite so stiffly, as a slightly prolonged setting-time is an advantage in this case—giving the amalgam time to complete its expansion before the lining has set, thus buffering the disrupting force.

"Not the least of its uses is in restoration of permanent molars with large cavities, leaving a very weak wall on one side. If amalgam were inserted the weak wall would certainly break down. Zinc Oxide mixed as above can be inserted, and if the cleaned walls are first moistened with a trace of Eugenol the material will readily adhere. Restored in this way it is not too much to expect the life of the tooth to be prolonged indefinitely. After five years the restoration may be seen with a hard shiny surface just as good as that of any amalgam. But this is not surprising, as Zinc Oxide and Eugenol requires a

moist atmosphere for setting—so what an ideal site for its setting is the mouth.

"It might seem an extravagant claim, and for that reason I hesitate to include this paragraph, but I feel I cannot withhold my enthusiasm for this substance in yet another emergency. If the pulp be accidentally exposed a stiff mix can with impunity be

placed right over the exposure (capping with celluloid cup being unnecessary). In this case the cavity walls should be moistened with Eugenol in the above manner. It will be found that there is no subsequent discomfort and normal resolution of the dentine takes place."—From *The South African Dental Journal*, 17:326 (October) 1943.



Skilled Hands



BUT all the Skill these hands possess in fashioning delicate cast gold restorations is lost when expressed in inferior materials. Cast your restorations in these Jelenko Golds. They are worthy media for skilled hands to use.

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THE PATRICIAN
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Until further notice, THE DENTAL DIGEST will allow \$25.00 toward the cost of the illustrations provided by

the author of every article accepted.

Before the year is out about 20,000 of our dental colleagues will be in military service. Few of them will have the time, the facilities, or the opportunities to develop new techniques or to write for the dental literature. They will be eager, however, to read of the new developments in dental science and art.

Writing articles for publication in technical journals can be a contribu-

tion to the war effort, because that is how to help our dental officers in the Army and Navy keep abreast of technical advancements, and it is one way to improve the skill and services of civilian dentists on the home front.

If you have a constructive idea, an innovation, a new result of tried and proved experiment, put it down in writing, illustrate it, and send the material to: The Editor of THE DENTAL DIGEST, 708 Church Street Evanston, Illinois.

We hope that you will accept this invitation!

DENTAL MEETING

Dates

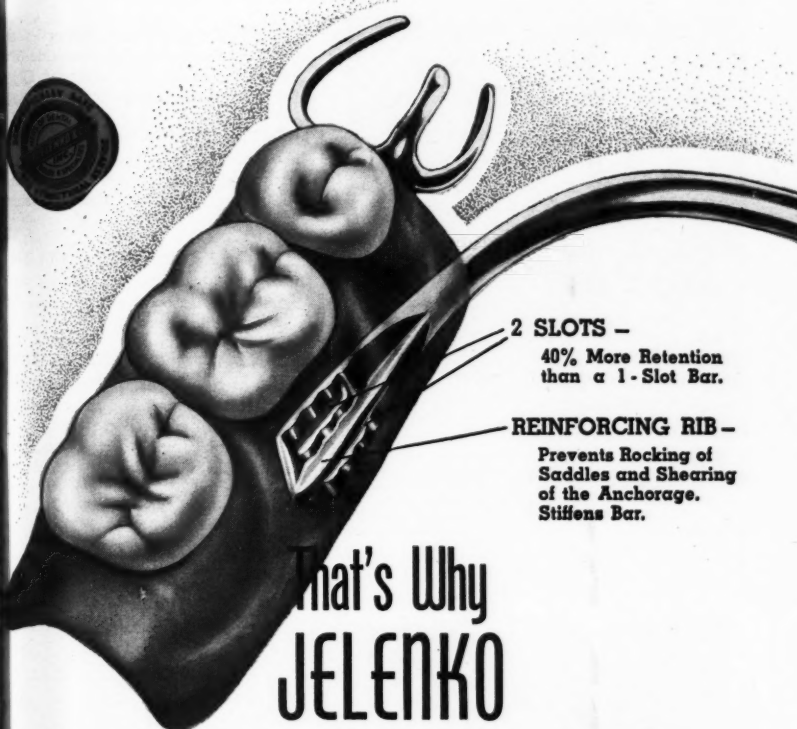
Chicago Dental Society, eightieth annual midwinter meeting, Palmer House, Chicago, February 21-23.

Ohio State Dental Board of Examiners, regular meeting, Ohio State University, College of Dentistry, February 28-March 1. For information write to Doctor Earl D. Lowry, Secretary, 79 East State Street, Columbus.

The Thomas P. Hinman Mid-Winter Clinic, Municipal Auditorium, Atlanta, Georgia, March 26-28.

Indiana State Dental Association, eighty-seventh annual meeting, Claypool Hotel, Indianapolis, May 15-17.

New Jersey State Board of Dental Examiners, regular meeting, Trenton. June 28-July 2. For information write to Doctor J. Frank Burke, 150 East State Street, Trenton.



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D P

ESTABLISHED 1929



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HOBOKEN, N. J.
TELEPHONE HOBOKEN 3-3188
REPORT OF TEST

TEST NUMBER
44352
(Refer to this number)
ORIGINAL

AUGUST 10, 1943

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SUPERVISED BY *W. J. H. H. H.*

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JANUARY, 1944

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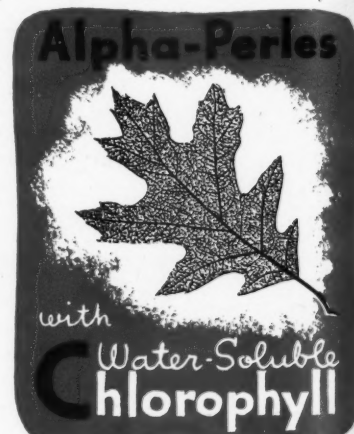
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